

Software Engineering Questions & Answers – Software Engineering Ethics – 1

1. Choose the correct option in terms of Issues related to professional responsibility

- a) Confidentiality
- b) Intellectual property rights
- c) Both Confidentiality & Intellectual property rights
- d) Managing Client Relationships

View Answer

Answer: c

Explanation: Engineers should normally respect the confidentiality of their employers or clients irrespective of whether or not a formal confidentiality agreement has been signed.

They should be aware of local laws governing the use of intellectual property such as patents, copyright, etc.

2. “Software engineers should not use their technical skills to *misuse* other people’s computers.” Here the term *misuse* refers to:

- a) Unauthorized access to computer material
- b) Unauthorized modification of computer material
- c) Dissemination of viruses or other malware
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

3. Explain what is meant by *PRODUCT* with reference to one of the eight principles as per the ACM/IEEE Code of Ethics ?

- a) The product should be easy to use
- b) Software engineers shall ensure that their products and related modifications meet the highest professional standards possible
- c) Software engineers shall ensure that their products and related modifications satisfy the client
- d) It means that the product designed /created should be easily available

View Answer

Answer: b

Explanation: None.

4. Identify an ethical dilemma from the situations mentioned below:

- a) Your employer releases a safety-critical system without finishing the testing of the system
- b) Refusing to undertake a project
- c) Agreement in principle with the policies of senior management
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

5. Identify the correct statement: “Software engineers shall

- a) act in a manner that is in the best interests of his expertise and favour.”
- b) act consistently with the public interest.”
- c) ensure that their products only meet the SRS.”
- d) all of the mentioned

View Answer

Answer: b

Explanation: Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest and shall ensure that their products and related modifications meet the highest professional standards possible. Thus options a & c are ruled out.

6. Select the incorrect statement: "Software engineers should
- a) not knowingly accept work that is outside your competence."
 - b) not use your technical skills to misuse other people's computers."
 - c) be dependent on their colleagues."
 - d) maintain integrity and independence in their professional judgment."

View Answer

Answer: c

Explanation:None.

7. Efficiency in a software product does not include _____

- a) responsiveness
- b) licensing
- c) memory utilization
- d) processing time

View Answer

Answer: b

Explanation: Licensing of a software product comes under corporate part of the software company.

8. As per an IBM report, "31%of the project get cancelled before they are completed, 53% overrun their cost estimates by an average of 189% and for every 100 projects, there are 94 restarts".What is the reason for these statistics ?

- a) Lack of adequate training in software engineering
- b) Lack of software ethics and understanding
- c) Management issues in the company
- d) All of the mentioned

View Answer

Answer: a

Explanation: Option b & c are a part of Software Engineering as a subject,hence option a covers them both.

9. The reason for software bugs and failures is due to

- a) Software companies
- b) Software Developers
- c) Both Software companies and Developers
- d) All of the mentioned

View Answer

Answer: c

Explanation: Software companies are responsible for making policies and providing working atmosphere for the software development, so in turn these companies become a part of software development process.Bugs from developers side is no new thing. Thus option c answers the question.

10. Company has latest computers and state-of-the- art software tools, so we shouldn't worry about the quality of the product.

- a) True
- b) False

View Answer

Answer: b

Explanation: The infrastructure is only one of the several factors that determine the quality of the product.

Software Engineering Questions and Answers – Software Engineering Ethics – 2

1. Which of these are not among the eight principles followed by Software Engineering Code of Ethics and Professional Practice ?

- a) PUBLIC
- b) PROFESSION
- c) PRODUCT
- d) ENVIRONMENT

View Answer

Answer: d

Explanation: Rest all are clauses for software ethics, environment does not focus on specific clause nor its of importance related to question.

2. What is a Software ?

- a) Software is set of programs
- b) Software is documentation and configuration of data
- c) Software is set of programs, documentation & configuration of data
- d) None of the mentioned

View Answer

Answer: c

Explanation: Software is not just set of program but it is also associated documentation and configuration of data to make program run.

3. Which of these does not account for software failure ?

- a) Increasing Demand
- b) Low expectation
- c) Increasing Supply
- d) Less reliable and expensive

View Answer

Answer: c

Explanation: Increasing supply will lead to more production and not failure.

4. What are attributes of good software ?

- a) Software maintainability
- b) Software functionality
- c) Software development
- d) Software maintainability & functionality

View Answer

Answer: d

Explanation: Good software should deliver the required functionality, maintainability. Software development is not an attribute but a fundamental.

5. Which of these software engineering activities are not a part of software processes ?

- a) Software dependence
- b) Software development
- c) Software validation
- d) Software specification

View Answer

Answer: a

Explanation: Software dependence is an attribute and not an engineering activity for process.

6. Which of these is incorrect ?

- a) Software engineering belongs to Computer science
- b) Software engineering is a part of more general form of System Engineering

- c) Computer science belongs to Software engineering
 - d) Software engineering is concerned with the practicalities of developing and delivering useful software
- View Answer

Answer: c

Explanation: Software engineering is a vast sub domain which comes under computer science which is main domain.

7. Which of these is true ?
- a) Generic products and customized products are types of software products
 - b) Generic products are produced by organization and sold to open market
 - c) Customized products are commissioned by particular customer
 - d) All of the mentioned
- View Answer

Answer: d

Explanation: All of them are true.

8. Which of these does not affect different types of software as a whole?
- a) Heterogeneity
 - b) Flexibility
 - c) Business and social change
 - d) Security
- View Answer

Answer: b

Explanation: Option b & c are a part of Software Engineering as a subject, hence option a covers them both.

9. The fundamental notions of software engineering does not account for ?
- a) Software processes
 - b) Software Security
 - c) Software reuse
 - d) Software Validation
- View Answer

Answer: d

Explanation: Software validation is an activity for software process and not the fundamental for engineering.

10. Which of these is not true ?
- a) Web has led to availability of software services and possibility of developing highly distributed service based systems
 - b) Web based systems have led to degradation of programming languages
 - c) Web brings concept of software as service
 - d) Web based system should be developed and delivered incrementally
- View Answer

Answer: b

Explanation: Web based systems has led to important advances in programming languages.

Software Engineering Questions and Answers – Software Life Cycle Models

1. Build & Fix Model is suitable for programming exercises of _____ LOC (Line of Code).

- a) 100-200
- b) 200-400
- c) 400-1000
- d) above 1000

View Answer

Answer: a

Explanation: Build & Fix Model is suitable for small projects & programming exercises of 100 or 200 lines.

2. RAD stands for

- a) Relative Application Development
- b) Rapid Application Development
- c) Rapid Application Document
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

3. Which one of the following models is not suitable for accommodating any change?

- a) Build & Fix Model
- b) Prototyping Model
- c) RAD Model
- d) Waterfall Model

View Answer

Answer: d

Explanation: Real projects rarely follow the sequential flow that the Waterfall Model proposes.

4. Which is not one of the types of prototype of Prototyping Model?

- a) Horizontal Prototype
- b) Vertical Prototype
- c) Diagonal Prototype
- d) Domain Prototype

View Answer

Answer: c

Explanation: There is no such thing as Diagonal Prototype whereas other options have their respective definitions.

5. Which one of the following is not a phase of Prototyping Model?

- a) Quick Design
- b) Coding
- c) Prototype Refinement
- d) Engineer Product

View Answer

Answer: b

Explanation: A prototyping model generates only a working model of a system.

6. Which of the following statements regarding Build & Fix Model is wrong?

- a) No room for structured design
- b) Code soon becomes unfixable & unchangeable

- c) Maintenance is practically not possible
- d) It scales up well to large projects

View Answer

Answer: d

Explanation: Build & Fix Model is suitable for 100-200 LOC

7. RAD Model has

- a) 2 phases
- b) 3 phase
- c) 5 phases
- d) 6 phases

View Answer

Answer: c

Explanation: RAD Model consists of five phases namely: Business modeling, Data modeling, Process modeling, Application generation and Testing & Turnover.

8. What is the major drawback of using RAD Model?

- a) Highly specialized & skilled developers/designers are required
- b) Increases reusability of components
- c) Encourages customer/client feedback
- d) Increases reusability of components, Highly specialized & skilled developers/designers are required

View Answer

Answer: d

Explanation: The client may create an unrealistic product vision leading a team to over or under-develop functionality. Also, the specialized & skilled developers are not easily available.

9. SDLC stands for

- a) Software Development Life Cycle
- b) System Development Life cycle
- c) Software Design Life Cycle
- d) System Design Life Cycle

View Answer

Answer: a

Explanation: None.

10. Which model can be selected if user is involved in all the phases of SDLC?

- a) Waterfall Model
- b) Prototyping Model
- c) RAD Model
- d) both Prototyping Model & RAD Model

View Answer

Answer: c

Explanation: None.

Software Engineering Questions and Answers – Evolutionary Software Process Models

1. Which one of the following is not an Evolutionary Process Model?

- a) WINWIN Spiral Model
- b) Incremental Model
- c) Concurrent Development Model
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

2. The Incremental Model is a result of combination of elements of which two models?

- a) Build & FIX Model & Waterfall Model
- b) Linear Model & RAD Model
- c) Linear Model & Prototyping Model
- d) Waterfall Model & RAD Model

View Answer

Answer: c

Explanation: Each linear sequence produces a deliverable “increment” of the software and particularly when we have to quickly deliver a limited functionality system.

3. What is the major advantage of using Incremental Model?

- a) Customer can respond to each increment
- b) Easier to test and debug
- c) It is used when there is a need to get a product to the market early
- d) Easier to test and debug & It is used when there is a need to get a product to the market early

View Answer

Answer: d

Explanation: Incremental Model is generally easier to test and debug than other methods of software development because relatively smaller changes are made during each iteration and is popular particularly when we have to quickly deliver a limited functionality system. However, option “a” can be seen in other models as well like RAD model, hence option “d” answers the question.

4. The spiral model was originally proposed by

- a) IBM
- b) Barry Boehm
- c) Pressman
- d) Royce

View Answer

Answer: b

Explanation: None.

5. The spiral model has two dimensions namely _____ and _____

- a) diagonal, angular
- b) radial, perpendicular
- c) radial, angular
- d) diagonal, perpendicular

View Answer

Answer: c

Explanation: The radial dimension of the model represents the cumulative costs and the angular dimension represents the progress made in completing each cycle. Each loop of the spiral from X-axis clockwise through 360° represents one phase.

6. How is WINWIN Spiral Model different from Spiral Model?

- a) It defines tasks required to define resources, timelines, and other project related information
- b) It defines a set of negotiation activities at the beginning of each pass around the spiral
- c) It defines tasks required to assess both technical and management risks
- d) It defines tasks required to construct, test, install, and provide user support

View Answer

Answer: b

Explanation: Except option "b" all other tasks/activities are present in Spiral Model as well.

7. Identify the disadvantage of Spiral Model.

- a) Doesn't work well for smaller projects
- b) High amount of risk analysis
- c) Strong approval and documentation control
- d) Additional Functionality can be added at a later date

View Answer

Answer: a

Explanation: All other options are the advantages of Spiral Model.

8. Spiral Model has user involvement in all its phases.

- a) True
- b) False

View Answer

Answer: b

Explanation: None.

9. How is Incremental Model different from Spiral Model?

- a) Progress can be measured for Incremental Model
- b) Changing requirements can be accommodated in Incremental Model
- c) Users can see the system early in Incremental Model
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

10. If you were to create client/server applications, which model would you go for?

- a) WINWIN Spiral Model
- b) Spiral Model
- c) Concurrent Model
- d) Incremental Model

View Answer

Answer: c

Explanation: When applied to client/server applications, the concurrent process model defines activities in two dimensions: a system dimension and a component dimension. Thus Concurrency is achieved by system and component activities occurring simultaneously and can be modeled using the state-oriented approach.

Software Engineering Questions and Answers – Selection of a Life Cycle Model

1. Selection of a model is based on

- a) Requirements
- b) Development team & Users
- c) Project type and associated risk
- d) All of the mentioned

View Answer

Answer: d

Explanation: Each model has to have some requirements, a team of developers, users and the risk involved in developing a project.

2. Which two models doesn't allow defining requirements early in the cycle?

- a) Waterfall & RAD
- b) Prototyping & Spiral
- c) Prototyping & RAD
- d) Waterfall & Spiral

View Answer

Answer: b

Explanation: Prototyping Model starts with a requirements analysis phase including techniques like FAST, QFD, Brainstorming. In case of Spiral model the first phase involves activities related to customer communication like determining objectives.

3. Which of the following life cycle model can be chosen if the development team has less experience on similar projects?

- a) Spiral
- b) Waterfall
- c) RAD
- d) Iterative Enhancement Model

View Answer

Answer: a

Explanation: Relying on risk assessment/analysis provides more flexibility than required for many applications which overcomes the criteria of less experienced developers.

4. If you were a lead developer of a software company and you are asked to submit a project/product within a stipulated time-frame with no cost barriers, which model would you select?

- a) Waterfall
- b) Spiral
- c) RAD
- d) Incremental

View Answer

Answer: c

Explanation: RAD model is inapplicable to develop cheaper products/software/projects as the cost of modeling, hiring highly skilled developers/designers and automated code generation is very high. But here the cost is not an issue, so one can select this model as it reduces development time.

5. Which two of the following models will not be able to give the desired outcome if user's participation is not involved?

- a) Waterfall & Spiral
- b) RAD & Spiral
- c) RAD & Waterfall
- d) RAD & Prototyping

View Answer

Answer: d

Explanation: Active Participation of user is involved in all the four phases of RAD model and in case of the Prototyping model we need user's presence/involvement every time a new prototype is build or designed.

6. A company is developing an advance version of their current software available in the market, what model approach would they prefer ?

- a) RAD
- b) Iterative Enhancement
- c) Both RAD & Iterative Enhancement
- d) Spiral

View Answer

Answer: c

Explanation: None.

7. One can choose Waterfall Model if the project development schedule is tight.

- a) True
- b) False

View Answer

Answer: b

Explanation: Real projects rarely follow the sequential flow and iterations in this model are handled indirectly. This changes can cause confusion as the project proceeds thereby delaying the delivery date.

8. Choose the correct option from given below:

- a) Prototyping Model facilitates reusability of components
- b) RAD Model Model facilitates reusability of components
- c) Both RAD & Prototyping Model facilitates reusability of components
- d) None

View Answer

Answer: c

Explanation: None.

9. Spiral Model has high reliability requirements.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

10. RAD Model has high reliability requirements.

- a) True
- b) False

View Answer

Answer: b

Explanation: None.

Software Engineering Questions and Answers – Fourth Generation Techniques

1. Identify a fourth generation language(4GL) from the given below.

- a) FORTRAN
- b) COBOL
- c) Unix shell
- d) C++

View Answer

Answer: c

Explanation: Rest all are third generation languages(3GL).

2. Arrange the following activities for making a software product using 4GT.

- i. Design strategy
 - ii. Transformation into product
 - iii. Implementation
 - iv. Requirement gathering
- a) 1, 4, 3, 2
 - b) 4, 3, 1, 2
 - c) 4, 1, 3, 2
 - d) 1, 3, 4, 2

View Answer

Answer: c

Explanation: The sequence of activities mentioned in option c represents the Fourth Generation Techniques(4GT)Model.

3. 4GL is an example of _____ processing.

- a) White Box
- b) Black Box
- c) Functional
- d) Both Black Box & Functional

View Answer

Answer: d

Explanation: Functional processing/testing is also referred to as black box testing in which contents of the black box are not known. Almost anything might be referred to as a black box: an algorithm or the human mind. Functionality of the black box is understood in terms of its inputs and outputs.

4. The 4GT Model is a package of _____

- a) CASE Tools
- b) Software tools
- c) Software Programs
- d) None of the mentioned

View Answer

Answer: b

Explanation: 4GT encompasses a broad array of software tools enabling the software engineer to specify the characteristics at a high level leading to an automatically generated source code based on these specifications.

5. Which of the following is not a type of a 4GL? One originating _____

- a) on Lisp machine
- b) on report generators
- c) from database query languages
- d) from GUI creators

View Answer

Answer: a

Explanation: Fifth-generation programming language are built on LISP.

6. In 4GT, we can specify the user requirements in graphic notation or small abbreviated language form.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

7. Productivity of software engineers is reduced in using a 4GT.

- a) True
- b) False

View Answer

Answer: b

Explanation: 4GLs are more programmer-friendly and enhance programming efficiency with usage of English-like words and phrases, thereby increasing the productivity of professionals able to engage in software development.

8. Which of the following 4GLs invented at IBM and subsequently adopted by ANSI and ISO as the standard language for managing structured data?

- a) SQL
- b) PROLOG
- c) C
- d) JAVA

View Answer

Answer: a

Explanation: C & JAVA are third generation languages(3GLs) whereas PROLOG is a 5GL.

9. What is a major advantage of using a 4GT Model for producing small scale products, applications or programs ?

- a) Improved productivity of software engineers
- b) Reduction in software development time
- c) 4GT helped by CASE tools and code generators offers a credible solution to many software problems
- d) None of the mentioned

View Answer

Answer: b

Explanation: Since automated coding is done using CASE tools & code generators proponents claim a dramatic reduction in software development time.

10. Which of the following model has a major disadvantage in terms of the coding phase of a software life cycle model ?

- a) Spiral Model
- b) Waterfall Model
- c) Rad Model
- d) 4GT Model

View Answer

Answer: d

Explanation: Since coding phase is eliminated in 4GT Model, more expertise is required for analysis, design and testing activities.

Software Engineering Questions and Answers – Software Process and Product – 1

1. Which one of the following is not a software process quality?

- a) Productivity
- b) Portability
- c) Timeliness
- d) Visibility

View Answer

Answer: b

Explanation: Portability is a software product quality which means software can run on different hardware platforms or software environments.

2. _____ & _____ are two kinds of software products.

- a) CAD, CAM
- b) Firmware, Embedded
- c) Generic, Customised
- d) None of the mentioned

View Answer

Answer: c

Explanation: rest all are sub categories/applications of option c.

3. Software costs more to maintain than it does to develop.

- a) True
- b) False

View Answer

Answer: a

Explanation: For systems with a long life, maintenance costs may be several times development costs.

4. Which one of the following is not an application of embedded software product?

- a) keypad control of a security system
- b) pattern recognition game playing
- c) digital function of dashboard display in a car
- d) none of the mentioned

View Answer

Answer: b

Explanation: Pattern recognition uses Artificial Intelligence (AI) software.

5. Purpose of process is to deliver software

- a) in time
- b) with acceptable quality
- c) that is cost efficient
- d) both in time & with acceptable quality

View Answer

Answer: d

Explanation: Cost of a software is a management issue & is not related to process activities.

6. The work associated with software engineering can be categorized into three generic phases, regardless of application area, project size, or complexity namely the _____ phase which focuses on *what*, the _____ phase which focuses on *how* and the _____ phase which focuses on *change*.

- i. support
- ii. development

iii. definition

- a) 1, 2, 3
- b) 2, 1, 3
- c) 3, 2, 1
- d) 3, 1, 2

View Answer

Answer: c

Explanation: None.

7. Which of the following activities of a Generic Process framework provides a feedback report?

- a) Communication
- b) Planning
- c) Modeling & Construction
- d) Deployment

View Answer

Answer: d

Explanation: In Deployment the product is delivered to the customer who evaluates the product and provides feedback based on the evaluation.

8. Process adopted for one project is same as the process adopted from another project.

- a) True
- b) False

View Answer

Answer: b

Explanation: the overall flow of activities, actions, tasks, the level of autonomy given to the software team and the inter dependencies among two process can never be the same.

9. Which one of the following is not an Umbrella Activity that complements the five process framework activities and help team manage and control progress, quality, change, and risk.

- a) Reusability management
- b) Risk management
- c) Measurement
- d) User Reviews

View Answer

Answer: d

Explanation: None.

10. Four types of change are encountered during the support phase. Which one of the following is not one that falls into such category?

- a) Translation
- b) Correction
- c) Adaptation
- d) Prevention

View Answer

Answer: a

Explanation: Translation is done in the development phase.

Software Engineering Questions and Answers – Software Process and Product – 2

1. If a software production gets behind schedule, one can add more programmers and catch up.

- a) True
- b) False

View Answer

Answer: b

Explanation: As new people are added, people who were working must spend time educating the newcomers, thereby reducing the amount of time spent on productive development effort.

2. Choose an internal software quality from given below:

- a) scalability
- b) usability
- c) reusability
- d) reliability

View Answer

Answer: c

Explanation: rest all are external qualities which are visible to the user.

3. RUP stands for _____ created by a division of _____

- a) Rational Unified Program, IBM
- b) Rational Unified Process, Infosys
- c) Rational Unified Process, Microsoft
- d) Rational Unified Process, IBM

View Answer

Answer: d

Explanation: None.

4. The RUP is normally described from three perspectives-dynamic, static & practice. What does static perspective do ?

- a) It shows the process activities that are enacted
- b) It suggests good practices to be used during the process
- c) It shows the phases of the model over time
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

5. The only deliverable work product for a successful project is the working program.

- a) True
- b) False

View Answer

Answer: b

Explanation: A working program is only one part of a software configuration that includes many elements. Documentation provides a foundation for successful engineering and, more important, guidance for software support.

6. Which phase of the RUP is used to establish a business case for the system ?

- a) Transition
- b) Elaboration
- c) Construction
- d) Inception

View Answer

Answer: d

Explanation: None.

7. Which one of the following is not a fundamental activity for software processes in software engineering ?

- a) Software Verification
- b) Software Validation
- c) Software design and implementation
- d) Software evolution

View Answer

Answer: a

Explanation: Software Verification is accounted for in implementation & testing activity.

8. A general statement of objectives is the major cause of failed software efforts.

- a) True
- b) False

View Answer

Answer: a

Explanation: A formal and detailed description of the information domain, function, behavior, performance, interfaces, design constraints and validation criteria is essential which can be determined only after thorough communication between customer and developer.

9. The longer a fault exists in software

- a) the more tedious its removal becomes
- b) the more costly it is to detect and correct
- c) the less likely it is to be properly corrected
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

10. Component-based Software Engineering allows faster delivery.

- a) True
- b) False

View Answer

Answer: a

Explanation: Due to using previously tested components they produce more reliable system at a faster rate.

11. Arrange the following steps to form a basic/general Engineering Process Model.

- i. Test
 - ii. Design
 - iii. Install
 - iv. Specification
 - v. Manufacture
 - vi. Maintain
- a) 2, 4, 5, 1, 6, 3
 - b) 4, 2, 5, 1, 3, 6
 - c) 2, 4, 5, 1, 3, 6
 - d) 4, 2, 5, 1, 6, 3

View Answer

Answer: b

Explanation: None.

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Software Engineering Questions and Answers – Agile Software Development

1. Select the option that suits the Manifesto for Agile Software Development

- a) Individuals and interactions
- b) Working software
- c) Customer collaboration
- d) All of the mentioned

View Answer

Answer:d

Explanation: None.

2. Agile Software Development is based on

- a) Incremental Development
- b) Iterative Development
- c) Linear Development
- d) Both Incremental and Iterative Development

View Answer

Answer:d

Explanation: The software is developed in increments with the customer specifying the requirements to be included in each increment and the highest priority is to satisfy the customer through early and continuous delivery of valuable software. They are iterative because they work on one iteration followed by improvements in next iteration

3. Which one of the following is not an agile method?

- a) XP
- b) 4GT
- c) AUP
- d) All of the mentioned

View Answer

Answer:b

Explanation: The 4GT approach does not incorporate iteration and the continuous feedback, which is the fundamental aspect of an agile method.

4. Agility is defined as the ability of a project team to respond rapidly to a change.

- a) True
- b) False

View Answer

Answer:b

Explanation: The aim of agile methods is to reduce overheads in the software process and to be able to respond quickly to changing requirements without excessive rework.

5. How is plan driven development different from agile development ?

- a) Outputs are decided through a process of negotiation during the software development process
- b) Specification, design, implementation and testing are interleaved
- c) Iteration occurs within activities
- d) All of the mentioned

View Answer

Answer:c

Explanation: A plan-driven approach to software engineering is based around separate development stages with the outputs to be produced at each of these stages planned in advance.

6. How many phases are there in Scrum ?

- a) Two
- b) Three
- c) Four
- d) Scrum is an agile method which means it does not have phases

View Answer

Answer:b

Explanation: There are three phases in Scrum. The initial phase is an outline planning phase followed by a series of sprint cycles and project closure phase.

7. Agile methods seem to work best when team members have a relatively high skill level.

- a) True
- b) False

View Answer

Answer:a

Explanation: None.

8. Which of the following does not apply to agility to a software process?

- a) Uses incremental product delivery strategy
- b) Only essential work products are produced
- c) Eliminate the use of project planning and testing
- d) All of the mentioned

View Answer

Answer:c

Explanation: Testing is a major part of each software development process which can't be avoided.

9. Which three framework activities are present in Adaptive Software Development(ASD) ?

- a) analysis, design, coding
- b) requirements gathering, adaptive cycle planning, iterative development
- c) speculation, collaboration, learning
- d) all of the mentioned

View Answer

Answer:c

Explanation: None.

10. In agile development it is more important to build software that meets the customers' needs today than worry about features that might be needed in the future.

- a) True
- b) False

View Answer

Answer:a

Explanation: None.

Software Engineering Questions and Answers – Extreme Programming

1. Incremental development in Extreme Programming (XP) is supported through a system release once every month.

- a) True
- b) False

View Answer

Answer: b

Explanation: Incremental development is supported through small, frequent system releases.

2. In XP, as soon as the work on a task is complete, it is integrated into the whole system.

- a) True
- b) False

View Answer

Answer: a

Explanation: XP follows a continuous integration approach. After any such integration, all the unit tests in the system must pass.

3. In XP Increments are delivered to customers every _____ weeks.

- a) One
- b) Two
- c) Three
- d) Four

View Answer

Answer: b

Explanation: Extreme Programming (XP) takes an 'extreme' approach to iterative development. New versions may be built several times per day, hence delivering the increment for approval every 2nd week after testing the new version.

4. User requirements are expressed as _____ in Extreme Programming.

- a) implementation tasks
- b) functionalities
- c) scenarios
- d) none of the mentioned

View Answer

Answer: c

Explanation: User requirements are expressed as scenarios or user stories. These are written on cards and the development team break them down into implementation tasks. These tasks are the basis of schedule and cost estimates.

5. Is a customer involved test development and validation in XP ?

- a) Yes
- b) No
- c) It may vary from Customer to Customer
- d) None of the mentioned

View Answer

Answer: c

Explanation: The role of the customer in the testing process is to help develop acceptance tests for the stories that are to be implemented in the next release of the system. However, people adopting the customer role have limited time available and so cannot work full-time with the development team. They may feel that providing the requirements was enough of a contribution and so may be reluctant to get involved in the testing process.

6. Programmers prefer programming to testing and sometimes they take shortcuts when writing tests. For example, they may write incomplete tests that do not check for all possible exceptions that may occur.

- a) True
- b) False

View Answer

Answer: a

Explanation: In XP Some tests can be very difficult to write incrementally. For example, in a complex user interface, it is often difficult to write unit tests for the code that implements the 'display logic' and workflow between screens.

7. Tests are automated in Extreme Programming.

- a) True
- b) False

View Answer

Answer: a

Explanation: Automated test harnesses are used to run all component tests each time that a new release is built.

8. In XP an automated unit test framework is used to write tests for a new piece of functionality before that functionality itself is implemented.

- a) True
- b) False

View Answer

Answer: a

Explanation: XP follows Test-first development approach.

9. Developers work individually on a release and they compare their results with other developers before forwarding that release to customers.

- a) True
- b) False

View Answer

Answer: b

Explanation: XP follows the principle of pair programming which means developers work in pairs, checking each other's work and providing the support to always do a good job.

10. Which four framework activities are found in the Extreme Programming(XP) ?

- a) analysis, design, coding, testing
- b) planning, analysis, design, coding
- c) planning, design, coding, testing
- d) planning, analysis, coding, testing

View Answer

Answer: c

Explanation: XP involves the mentioned four activities, and in the same in order.

Software Engineering Questions and Answers – Requirement Engineering

1. What are the types of requirements ?

- a) Availability
- b) Reliability
- c) Usability
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the mentioned traits are beneficial for an effective product to be developed.

2. Select the developer-specific requirement ?

- a) Portability
- b) Maintainability
- c) Availability
- d) Both Portability and Maintainability

View Answer

Answer: d

Explanation: Availability is user specific requirement.

3. Which one of the following is not a step of requirement engineering?

- a) elicitation
- b) design
- c) analysis
- d) documentation

View Answer

Answer: b

Explanation: Requirement Elicitation, Requirement Analysis, Requirement Documentation and Requirement Review are the four crucial process steps of requirement engineering. Design is in itself a different phase of Software Engineering.

4. FAST stands for

- a) Functional Application Specification Technique
- b) Fast Application Specification Technique
- c) Facilitated Application Specification Technique
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

5. QFD stands for

- a) quality function design
- b) quality function development
- c) quality function deployment
- d) none of the mentioned

View Answer

Answer: c

Explanation: None.

6. A Use-case actor is always a person having a role that different people may play.

- a) True

b) False

View Answer

Answer: b

Explanation: Use-case Actor is anything that needs to interact with the system, be it a person or another (external) system.

7. The user system requirements are the parts of which document ?

- a) SDD
- b) SRS
- c) DDD
- d) SRD

View Answer

Answer: b

Explanation: Software requirements specification (SRS), is a complete description of the behaviour of a system to be developed and may include a set of use cases that describe interactions the users will have with the software.

8. A stakeholder is anyone who will purchase the completed software system under development.

- a) True
- b) False

View Answer

Answer: b

Explanation: Stakeholders are anyone who has an interest in the project. Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion.

9. Conflicting requirements are common in Requirement Engineering, with each client proposing his or her version is the right one.

- a) True
- b) False

View Answer

Answer: a

Explanation: This situation is seen in every field of work as each professional has his/her way of looking onto things & would argue to get his/her point approved.

10. Which is one of the most important stakeholder from the following ?

- a) Entry level personnel
- b) Middle level stakeholder
- c) Managers
- d) Users of the software

View Answer

Answer: d

Explanation: Users are always the most important stakeholders. After all, without users or customers, what's the point of being in business?.

Software Engineering Questions and Answers – Functional and Non-Functional Requirements

1. Which one of the following is a functional requirement ?

- a) Maintainability
- b) Portability
- c) Robustness
- d) None of the mentioned

View Answer

Answer: d

Explanation: All are non-functional requirements representing quality of the system. Functional requirements describe what the software has to do.

2. Which one of the following is a requirement that fits in a developer's module ?

- a) Availability
- b) Testability
- c) Usability
- d) Flexibility

View Answer

Answer: b

Explanation: A developer needs to test his product before launching it into the market.

3. "Consider a system where, a heat sensor detects an intrusion and alerts the security company." What kind of a requirement the system is providing ?

- a) Functional
- b) Non-Functional
- c) Known Requirement
- d) None of the mentioned

View Answer

Answer: a

Explanation: Functional requirements describe what the software has to do.

4. Which of the following statements explains portability in non-functional requirements?

- a) It is a degree to which software running on one platform can easily be converted to run on another platform
- b) It cannot be enhanced by using languages, OS' and tools that are universally available and standardized
- c) The ability of the system to behave consistently in a user-acceptable manner when operating within the environment for which the system was intended
- d) None of the mentioned

View Answer

Answer: a

Explanation: Option c is termed as reliability and option e refers to efficiency.

5. Functional requirements capture the intended behavior of the system.

- a) True
- b) False

View Answer

Answer: a

Explanation: The behavior of functional requirements may be expressed as services, tasks or functions the system is required to perform.

6. Choose the incorrect statement with respect to Non-Functional Requirement(NFR).

- a) Product-oriented Approach – Focus on system (or software) quality

- b) Process-oriented Approach – Focus on how NFRs can be used in the design process
- c) Quantitative Approach – Find measurable scales for the functionality attributes
- d) Qualitative Approach – Study various relationships between quality goals

View Answer

Answer: c

Explanation: Quantitative Approaches in NFRs are used to find measurable scales for the quality attributes like efficiency, flexibility, integrity, usability etc.

7. How many classification schemes have been developed for NFRs ?

- a) Two
- b) Three
- c) Four
- d) Five

View Answer

Answer: d

Explanation: Software Quality Tree [Boehm 1976], Roman [IEEE Computer 1985], Process-Product-External considerations [Sommerville 1992], Mc Call's NFR list and Dimensions of Quality–Components of FURPS+ are the five classification schemes for NFRs.

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8. According to components of FURPS+, which of the following does not belong to S ?

- a) Testability
- b) Speed Efficiency
- c) Serviceability
- d) Installability

View Answer

Answer: b

Explanation: Speed Efficiency belong to Performance (P) in FURPS+ .

9. Does software wear & tear by decomposition ?

- a) Yes
- b) No

View Answer

Answer: b

Explanation: Unlike hardware, software is reliable.

10. What are the four dimensions of Dependability ?

- a) Usability, Reliability, Security, Flexibility
- b) Availability, Reliability, Maintainability, Security
- c) Availability, Reliability, Security, Safety
- d) Security, Safety, Testability, Usability

View Answer

Answer: c

Explanation: All the traits of option c sync with dependability.

11. Choose the correct statement on how NFRs integrates with Rational Unified Process ?

- a) System responds within 4 seconds on average to local user requests and changes in the environment
- b) System responds within 4 seconds on average to remote user requests and changes in the environment
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: b

Explanation: System response to a local user is 2 seconds on average.

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Software Engineering Questions and Answers – Requirement Elicitation

1. What is the first step of requirement elicitation ?

- a) Identifying Stakeholder
- b) Listing out Requirements
- c) Requirements Gathering
- d) All of the mentioned

View Answer

Answer: a

Explanation: Stakeholders are the one who will invest in and use the product, so its essential to chalk out stakeholders first.

2. Starting from least to most important, choose the order of stakeholder.

- i. Managers
 - ii. Entry level Personnel
 - iii. Users
 - iv. Middle level stakeholder
- a) i, ii, iv, iii
 - b) i, ii, iii, iv
 - c) ii, iv, i, iii
 - d) All of the mentioned

View Answer

Answer: c

Explanation: Users are your customers, they will be using your product, thus making them most important of all.

3. Arrange the tasks involved in requirements elicitation in an appropriate manner.

- i. Consolidation
 - ii. Prioritization
 - iii. Requirements Gathering
 - iv. Evaluation
- a) iii, i, ii, iv
 - b) iii, iv, ii, i
 - c) iii, ii, iv, i
 - d) ii, iii, iv, i

View Answer

Answer: b

Explanation: Requirements gathering captures viewpoint from different users followed by evaluation of those view points. Now comes the task of checking the relative importance of the requirements and finally to consolidate or bind together the information collected.

4. What are the types of requirement in Quality Function Deployment(QFD) ?

- a) Known, Unknown, Undreamed
- b) User, Developer
- c) Functional, Non-Functional
- d) Normal, Expected, Exciting

View Answer

Answer: d

Explanation: According to QFD, Normal, Expected and Exciting requirements maximizes customer satisfaction from the Software Engineering Process.

5. What kind of approach was introduced for elicitation and modelling to give a functional view of the system ?

- a) Object Oriented Design (by Booch)
- b) Use Cases (by Jacobson)

- c) Fusion (by Coleman)
 - d) Object Modeling Technique (by Rumbaugh)
- View Answer

Answer: b

Explanation: Use Case captures who does what with the system, for what purpose, without dealing with system internals.

6. What are the kinds of actors used in OOSE ?

- a) Primary
- b) Secondary
- c) Ternary
- d) Both Primary and Secondary

View Answer

Answer: d

Explanation: A primary actor is one having a goal requiring the assistance of the system whereas, a secondary actor is one from which system needs assistance. There is no such thing as ternary actor in Software Engineering.

7. Why is Requirements Elicitation a difficult task ?

- a) Problem of scope
- b) Problem of understanding
- c) Problem of volatility
- d) All of the mentioned

View Answer

Answer: d

Explanation: Users specify unnecessary technical detail that may confuse, rather than clarify overall system objectives. Also, the customers/users are not completely sure of what is needed, have a poor understanding of the capabilities and limitations of their computing environment and they do not understand that the requirements change over time.

8. What requirement gathering method developed at IBM in 1970s is used for managing requirement elicitation ?

- a) JAD
- b) Traceability
- c) FAST
- d) Both JAD and Traceability

View Answer

Answer: d

Explanation: Joint application design (JAD) is a process used to collect business requirements while developing new information systems for a company. Requirements traceability is concerned with documenting the life of a requirement and providing bi-directional traceability between various associated requirements.

9. Requirements elicitation is a cyclic process

- a) True
- b) False

View Answer

Answer: a

Explanation: Requirements traceability provides bi-directional traceability between various associated requirements.

10. How many Scenarios are there in elicitation activities ?

- a) One
- b) Two
- c) Three
- d) Four

View Answer

Answer: d

Explanation: As-is Scenario, Visionary Scenario, Evaluation Scenario and Training Scenario are the four scenarios in requirement elicitation activities.

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Software Engineering Questions and Answers – Requirement Elicitation Techniques -1

1. Which of the following elicitation techniques is a viewpoint based method?

- a) FODA
 - b) QFD
 - c) CORE
 - d) IBIS
- View Answer

Answer: c

Explanation: Controlled Requirements Expression(CORE) says that any system can be viewed from a number of view points and that a complete picture of system requirements can only emerge by putting together the various viewpoints.

2. _____ and _____ are the two view points discussed in Controlled Requirements Expression (CORE).

- a) Functional, Non-Functional
 - b) User, Developer
 - c) Known, Unknown
 - d) All of the mentioned
- View Answer

Answer: a

Explanation: The CORE sessions includes the discussion of functional and non-functional requirements.

3. What is the major drawback of CORE ?

- a) Requirements are comprehensive
 - b) NFRs are not given enough importance
 - c) Role of analyst is passive
 - d) All of the mentioned
- View Answer

Answer: c

Explanation: In CORE the requirement specification are put together by all users, customers and analysts, so a passive analyst will not get the requirements properly.

4. Choose a framework that corresponds to Issue Based Information System (IBIS).

- a) Idea -> Question -> Argument
 - b) Question -> Idea -> Argument
 - c) Issue -> Position -> Justification
 - d) Both Question -> Idea -> Argument and Issue -> Position -> Justification
- View Answer

Answer: d

Explanation: IBIS is a simple and non-intrusive method that provides a framework for resolving issues and gathering requirements.

5. How is CORE different from IBIS ?

- a) Iterative in nature
 - b) Redundancies are removed
 - c) It is simple and an easier method to use
 - d) Consistency problems are addressed in CORE
- View Answer

Answer: d

Explanation: Preliminary data collection is done in CORE to get some broad level data on each view point to structure the view point and to check consistency from within and outside the viewpoints.

6. Which of the following Requirement Elicitation Techniques removes the poor understanding of application domain and lack of common terminology between the users and the analysts ?

- a) FODA
- b) CORE
- c) IBIS
- d) Prototyping

[View Answer](#)

Answer: a

Explanation: Feature Oriented Domain Analysis (FODA) is defined as the process of identifying, collecting, organizing and representing relevant information in a domain .

7. How many steps are involved in Feature Oriented Domain Analysis (FODA) ?

- a) Two
- b) Three
- c) Four
- d) Five

[View Answer](#)

Answer: b

Explanation: Context Analysis, Domain Modeling and Architecture Modeling are the three steps involved in Feature Oriented Domain Analysis (FODA).

8. IBIS is a more structured approach than CORE.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: IBIS is a more structured approach as it captures information which is consistent and important. On the other hand CORE gives importance to every view point even if it is obsolete.

9. Which one of the following is not an actor in JAD sessions ?

- a) User
- b) Tester
- c) Scribe
- d) Sponsor

[View Answer](#)

Answer: b

Explanation: A Tester's role is seen in after coding phase rather than in elicitation phase.

10. What of the following is not an output of a JAD session ?

- a) Context Diagrams
- b) DFDs
- c) ER model
- d) UML diagrams

[View Answer](#)

Answer: d

Explanation: Unified Modeling Language (UML) diagrams are constructed during the design phase of the SDLC.

Software Engineering Questions and Answers – Requirement Elicitation Techniques – 2

1. How is brainstorming different from JAD ? Brainstorming sessions

- a) last for about 2-3 hours
- b) last for about 2-3 days
- c) cover the technology used for the development
- d) all of the mentioned

View Answer

Answer: a

Explanation: Brainstorming is a group or individual creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its member(s). The idea is to quickly reach to an approved solution ASAP.

2. How is throwaway prototype different from evolutionary prototype ?

- a) It involves successive steps
- b) It involves just one task
- c) The prototype is built with the idea that it will eventually be converted into final system
- d) It has a shorter development time

View Answer

Answer: b

Explanation: Except option b all other options represent the characteristics of an evolutionary prototype.

3. Keeping the requirements of QFD in mind which of the following is not an example of an Expected Requirement ?

- a) Ease of software installation
- b) Overall operational correctness and reliability
- c) Specific system functions
- d) Quality graphical display

View Answer

Answer: c

Explanation: Expected requirements are so fundamental that a customer does not explicitly state them. System functions comes under the category of Normal requirements in QFD which is compulsory to be defined, hence is not an expected requirement.

4. QFD works best if it has management commitment.

- a) True
- b) False

View Answer

Answer: a

Explanation: QFD involves heavy investment in initial stages, thus bounding the management to provide appropriate funding for the development process .

5. Which of the following Requirement Elicitation Techniques is applicable to messy, changing and ill-defined problem situations ?

- a) Quality Function Deployment (QFD)
- b) Prototyping
- c) Soft Systems Methodology (SSM)
- d) Controlled Requirements Expression (CORE)

View Answer

Answer: c

Explanation: Soft systems methodology (SSM) is a systemic approach for tackling real-world problematic situations. It is a common misunderstanding that SSM is a methodology for dealing solely with 'soft problems' (problems which involve psychological, social, and cultural elements). SSM does not differentiate between 'soft' and 'hard' problems, it merely provides a different way of dealing with situations perceived as problematic.

6. To ensure that a given root definition is rigorous and comprehensive, The Lancaster team proposed several criteria that are summarized in the mnemonic CATWOE in Soft Systems Methodology (SSM). Which of the following alphabet is representing an entirely different meaning to SSM ?

- a) C – Customer
- b) A – Actor
- c) T – Transformation
- d) E – ER Model

[View Answer](#)

Answer: d

Explanation: 'E' in CATWOE stands for Environmental constraints.

7. Choose the disadvantage of using SSM as an elicitation technique.

- a) It incorporates human element into design
- b) SSM is in its infant stage
- c) SSM is suitable for new systems
- d) Standard methodologies like Role Exploration, Issue Resolution and Reorganization support SSM

[View Answer](#)

Answer: b

Explanation: SSM is still in its infancy. It is evolving and its industrial usage is low.

8. How many phases are there in Brainstorming ?

- a) Two
- b) Three
- c) Four
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: Preparation, Execution and Follow up are the three phases to be achieved for a successful brainstorming session.

9. Who controls the FAST (Facilitated Application Specification Techniques) meeting ?

- a) System Analyst
- b) Scribe
- c) Facilitator
- d) Manager

[View Answer](#)

Answer: c

Explanation: A Facilitator (a customer/developer/an outsider) controls the FAST meeting. His role is to ensure that the meeting is productive.

10. Arrange the steps in order to represent the conducting of Wideband Delphi Technique.

- i. Conduct a group discussion
 - ii. Conduct another group discussion
 - iii. Present experts with a problem
 - iv. Collect expert opinion anonymously
 - v. Iterate until consensus is reached
 - vi. Feedback a summary of result to each expert
- a) i, iii, ii, iv, v, vi
 - b) iii, i, ii, iv, v, vi
 - c) i, ii, iii, iv, vi, v
 - d) iii, i, iv, vi, ii, v

[View Answer](#)

Answer: d

Explanation: The sequence represents the working steps of a Wideband Delphi technique .

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Software Engineering Questions and Answers – Requirement Analysis

1. Which of the following is not a diagram studied in Requirement Analysis ?

- a) Use Cases
- b) Entity Relationship Diagram
- c) State Transition Diagram
- d) Activity Diagram

View Answer

Answer: d

Explanation: Activity Diagram comes under the design phase of SDLC.

2. How many feasibility studies is conducted in Requirement Analysis ?

- a) Two
- b) Three
- c) Four
- d) None of the mentioned

View Answer

Answer: b

Explanation: Economic feasibility (cost/benefit analysis), Technical feasibility (hardware/software/people, etc.) and Legal feasibility studies are done in Requirement Analysis.

3. How many phases are there in Requirement Analysis ?

- a) Three
- b) Four
- c) Five
- d) Six

View Answer

Answer: c

Explanation: Problem Recognition, Evaluation and Synthesis (focus is on what not how), Modeling, Specification and Review are the five phases.

4. Traceability is not considered in Requirement Analysis.

- a) True
- b) False

View Answer

Answer: b

Explanation: Requirements traceability is concerned with documenting the life of a requirement and providing bi-directional traceability between various associated requirements, hence requirements must be traceable.

5. Requirements analysis is critical to the success of a development project.

- a) True
- b) False
- c) Depends upon the size of project
- d) None of the mentioned

View Answer

Answer: a

Explanation: Requirements must be actionable, measurable, testable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design.

6. _____ and _____ are the two issues of Requirement Analysis.

- a) Performance, Design
- b) Stakeholder, Developer
- c) Functional, Non-Functional
- d) None of the mentioned

View Answer

Answer: b

Explanation: Option a and c are the types of requirements and not the issues of requirement analysis..

7. The requirements that result from requirements analysis are typically expressed from one of three perspectives or views. What is that perspective or view ?

- a) Developer
- b) User
- c) Non-Functional
- d) Physical

View Answer

Answer: d

Explanation: The perspectives or views have been described as the Operational, Functional, and Physical views. All three are necessary and must be coordinated to fully understand the customers' needs and objectives.

8. Requirements Analysis is an Iterative Process.

- a) True
- b) False

View Answer

Answer: a

Explanation: Requirements analysis is conducted iteratively with functional analysis to optimize performance requirements for identified functions, and to verify that synthesized solutions can satisfy customer requirements.

9. Coad and Yourdon suggested _____ selection characteristics that should be used as an analyst considers each potential object for inclusion in the requirement analysis model.

- a) Three
- b) Four
- c) Five
- d) Six

View Answer

Answer: d

Explanation: Retained information, Needed services, Multiple attributes, Common attributes, Common operations and Essential requirements are the six criteria mentioned by Coad and Yourdon.

10. Requirements should specify 'what' but not 'how'.

- a) True
- b) False

View Answer

Answer: a

Explanation: 'What' refers to a system's purpose, while 'How' refers to a system's structure and behavior.

Software Engineering Questions and Answers – Requirement Documentation

1. Which of the following property does not correspond to a good Software Requirements Specification (SRS) ?

- a) Verifiable
- b) Ambiguous
- c) Complete
- d) Traceable

View Answer

Answer: b

Explanation: The SRS should be unambiguous in nature which means each sentence in SRS should have a unique interpretation.

2. Which of the following property of SRS is depicted by the statement : “Conformity to a standard is maintained” ?

- a) Correct
- b) Complete
- c) Consistent
- d) Modifiable

View Answer

Answer: b

Explanation: The SRS is complete full labeling and referencing of all figures, tables etc. and definition of all terms and units of measure is defined.

3. The SRS is said to be *consistent* if and only if

- a) its structure and style are such that any changes to the requirements can be made easily while retaining the style and structure
- b) every requirement stated therein is one that the software shall meet
- c) every requirement stated therein is verifiable
- d) no subset of individual requirements described in it conflict with each other

View Answer

Answer: d

Explanation: Real world object may conflict with each other for example one requirement says that all lights should be red while the other states that all lights should green.

4. Which of the following statements about SRS is/are true ?

- i. SRS is written by customer
- ii. SRS is written by a developer
- iii. SRS serves as a contract between customer and developer

- a) Only i is true
- b) Both ii and iii are true
- c) All are true
- d) None of the mentioned

View Answer

Answer: c

Explanation: The SRS acts as a communication media between the Customer, Analyst, system developers, maintainers etc. Thus it is a contract between Purchaser and Supplier. It is essentially written by a developer on the basis of customer's need but in some cases it may be written by a customer as well.

5. The SRS document is also known as _____ specification.

- a) black-box
- b) white-box
- c) grey-box
- d) none of the mentioned

View Answer

Answer: a

Explanation: The system is considered as a black box whose internal details are not known that is, only its visible external (input/output) behavior is documented.

6. Which of the following is included in SRS ?

- a) Cost
- b) Design Constraints
- c) Staffing
- d) Delivery Schedule

View Answer

Answer: b

Explanation: Design constraints include standards to be incorporated in the software, implementation language, resource limits, operating environment etc.

7. Which of the following is not included in SRS ?

- a) Performance
- b) Functionality
- c) Design solutions
- d) External Interfaces

View Answer

Answer: c

Explanation: The SRS document concentrates on: "what needs to be done" and carefully avoids the solution ("how to do") aspects.

8. Arrange the given sequence to form a SRS Prototype outline as per IEEE SRS Standard.

- i. General description
- ii. Introduction
- iii. Index
- iv. Appendices
- v. Specific Requirements

- a) iii, i, ii, v, iv
- b) iii, ii, i, v, iv
- c) ii, i, v, iv, iii
- d) iii, i, ii

View Answer

Answer: c

Explanation: The given sequence correctly resemble a standard SRS prototype as per IEEE.

9. Consider the following Statement: "The output of a program shall be given within 10 secs of event X 10% of the time." What characteristic of SRS is being depicted here ?

- a) Consistent
- b) Verifiable
- c) Non-verifiable
- d) Correct

View Answer

Answer: b

Explanation: An SRS is verifiable, if and only if, every requirement stated therein is verifiable. Here the given condition can be verified during testing phase.

10. Consider the following Statement: "The data set will contain an end of file character." What characteristic of SRS is being depicted here ?

- a) Consistent
- b) Non-verifiable
- c) Correct

d) Ambiguous

View Answer

Answer: b

Explanation: An SRS is unambiguous if and only if, every requirement stated therein has only one unique interpretation. The given statement does not answer the question: "which data set will have an end of file character ?".

11. Consider the following Statement: "The product should have a good human interface."What characteristic of SRS is being depicted here ?

a) Consistent

b) Non-Verifiable

c) Correct

d) Ambiguous

View Answer

Answer: b

Explanation: An SRS is verifiable, if and only if, every requirement stated therein is verifiable. The statement can only be answered on completion of the software and customer evaluation but still human interface will vary from person to person.

12. Narrative essay is one of the best types of specification document ?

a) True

b) False

View Answer

Answer: b

Explanation: Narrative essay is one of the worst types of specification document as it is difficult to change, difficult to be precise, has scope for contradictions, etc.

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Software Engineering Questions and Answers – Requirement Management

1. Which two requirements are given priority during Requirement Management of a product ?

- a) User and Developer
- b) Functional and Non-functional
- c) Enduring and Volatile
- d) All of the mentioned

View Answer

Answer: c

Explanation: Enduring requirements are core requirements & are related to main activity of the organization while volatile requirements are likely to change during software development life cycle or after delivery of the product.

2. Considering the example of issue/return of a book, cataloging etc. in a library management. What type of management requirement is being depicted here?

- a) Enduring
- b) Volatile
- c) Both Enduring & Volatile
- d) All of the mentioned

View Answer

Answer: a

Explanation: For library management system issue/return of a book, cataloging etc. are core activities and are stable for any system.

3. Why is Requirements Management Important ? It is due to the changes

- a) to the environment
- b) in technology
- c) in customer's expectations
- d) in all of the mentioned.

View Answer

Answer: d

Explanation: Systems continue to be built as the advancement of new products being launched in the market and so does the market changes, the technology and in turn customer's expectation.

4. Requirements Management is a prerequisite for Quality-Oriented Development.

- a) True
- b) False

View Answer

Answer: a

Explanation: Quality makes no sense without reference to requirements, which means quality-oriented development is requirements-driven development, thus requirements management is a prerequisite for quality-oriented development.

5. Requirements traceability is one of the most important part requirement management. It may also be referred to as the heart of requirement management.

- a) True
- b) False

View Answer

Answer: a

Explanation: Requirements traceability refers to the ability to describe and follow the life of a requirement in both forwards and backwards direction. Requirements can be traced from its origins, through its development and specification, to its subsequent deployment and use, and through periods of ongoing refinement and iteration in any of these phases.

6. Requirements Management has a high initial start-up cost but does not need ongoing funding throughout a project.

- a) True
- b) False

View Answer

Answer: b

Explanation: Requirements Management needs continued funding throughout a project. Project funding is often limited at the onset of a project, restricted to those aspects of the project which are tangible and visible, and subsequently allocated in a phase-by-phase manner.

7. Which of the following is not a Requirement Management workbench tool ?

- a) RTM
- b) DOORS
- c) Rational Suite
- d) RDD 100

View Answer

Answer: c

Explanation: Rational Suite is an environment tool for requirement management.

8. Which of the following is a requirement management activity ?

- a) Investigation
- b) Design
- c) Construction and Test
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the options are the activities of requirement management.

9. What functionality of Requirement Management Tool (RMT) is depicted by the statement: "the tool should be able to automatically detect relations between artifacts. For example information retrieval techniques, monitoring of change history, naming schemas or model transformations."

- a) Automatic Link Detection
- b) Documentation Support
- c) Graphical Representation
- d) Automatic Link Creation and Change

View Answer

Answer: a

Explanation: DOORS is one such tool that supports Automatic Link Detection.

10. According to a statistical report: "over 30% of all software projects are cancelled before completion and over 70% of the remainder fail to deliver expected features". What must be the reason for such a situation ?

- a) Poor change management
- b) Poor requirements management
- c) Poor quality control
- d) All of the mentioned

View Answer

Answer: b

Explanation: Fundamental to the problem mentioned in the statistical report is poor requirements management. Option a and c are its sub parts.

Software Engineering Questions and Answers – System Modelling – 1

1. The Unified Modeling Language (UML) has become an effective standard for software modelling. How many different notations does it have ?

- a) Three
- b) Four
- c) Six
- d) Nine

View Answer

Answer: d

Explanation: The different notations of UML includes the nine UML diagrams namely class, object, sequence, collaboration, activity, state-chart, component, deployment and use case diagrams.

2. Which model in system modelling depicts the dynamic behaviour of the system ?

- a) Context Model
- b) Behavioral Model
- c) Data Model
- d) Object Model

View Answer

Answer: b

Explanation: Behavioral models are used to describe the dynamic behavior of an executing system. This can be modeled from the perspective of the data processed by the system or by the events that stimulate responses from a system.

3. Which model in system modelling depicts the static nature of the system ?

- a) Behavioral Model
- b) Context Model
- c) Data Model
- d) Structural Model

View Answer

Answer: d

Explanation: Structural models show the organization and architecture of a system. These are used to define the static structure of classes in a system and their associations.

4. Which perspective in system modelling shows the system or data architecture.

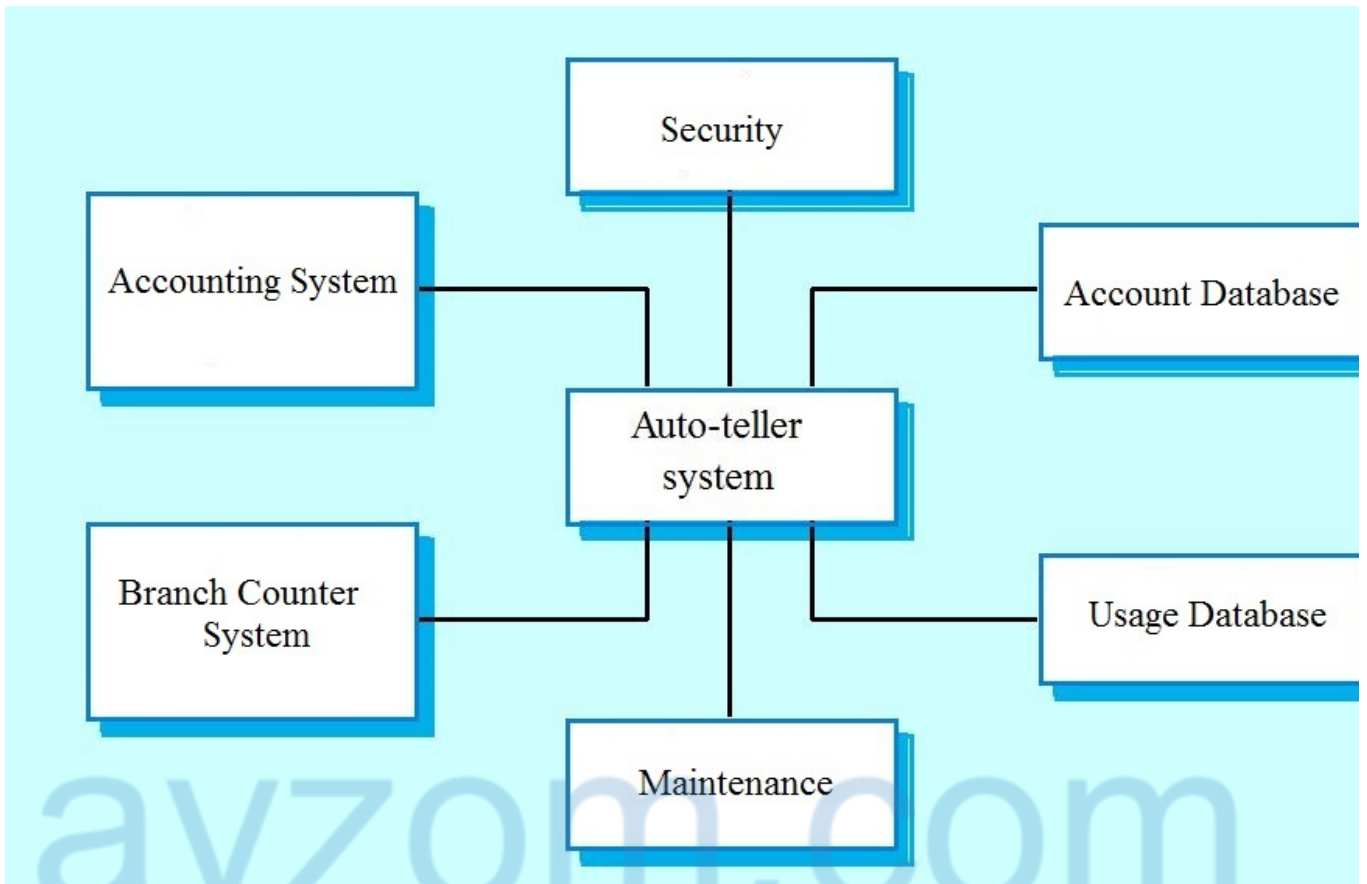
- a) Structural perspective
- b) Behavioral perspective
- c) External perspective
- d) All of the mentioned

View Answer

Answer: a

Explanation: Structural perspective is used to define the static structure of classes in a system and their associations.

5. Which system model is being depicted by the ATM operations shown below:



- a) Structural model
- b) Context model
- c) Behavioral model
- d) Interaction model

View Answer

Answer: b

Explanation: Context models are used to illustrate the operational context of a system. They show what lies outside the system boundaries.

6. Activity diagrams are used to model the processing of data.

- a) True
- b) False

View Answer

Answer: a

Explanation: The statement mentioned is true and each activity represents one process step.

7. Model-driven engineering is just a theoretical concept. It cannot be converted into a working/executable code.

- a) True
- b) False

View Answer

Answer: b

Explanation: Model-driven engineering is an approach to software development in which a system is represented as a set of models that can be automatically transformed to executable code.

8. The UML supports event-based modeling using _____ diagrams.

- a) Deployment

- b) Collaboration
 - c) State chart
 - d) All of the mentioned
- View Answer

Answer: c

Explanation: State diagrams show system states and events that cause transitions from one state to another.

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Software Engineering Questions and Answers – System Modelling – 2

1. Which of the following diagram is not supported by UML considering Data-driven modeling ?

- a) Activity
- b) Data Flow Diagram (DFD)
- c) State Chart
- d) Component

View Answer

Answer: b

Explanation: DFDs focus on system functions and do not recognize system objects.

2. _____ allows us to infer that different members of classes have some common characteristics.

- a) Realization
- b) Aggregation
- c) Generalization
- d) dependency

View Answer

Answer: c

Explanation: Generalization is an everyday technique that we use to manage complexity. This means that common information will be maintained in one place only.

3. One creates Behavioral models of a system when you are discussing and designing the system architecture.

- a) True
- b) False

View Answer

Answer: b

Explanation: Structural models of software display the organization of a system in terms of the components that make up that system and their relationships.

4. _____ & _____ diagrams of UML represent Interaction modeling.

- a) Use Case, Sequence
- b) Class, Object
- c) Activity, State Chart
- d) All of the mentioned

View Answer

Answer: a

Explanation: Use case modeling is mostly used to model interactions between a system and external actors. Sequence diagrams are used to model interactions between system components, although external agents may also be included.

5. Which level of Entity Relationship Diagram (ERD) models all entities and relationships ?

- a) Level 1
- b) Level 2
- c) Level 3
- d) Level 4

View Answer

Answer: b

Explanation: Level 1 ERD models all data objects (entities) and their “connections” to one another while Level 3 ERD models all entities, relationships, and the attributes that provide further depth. Thus option b is correct.

6. _____ classes are used to create the interface that the user sees and interacts with as the software is used.

- a) Controller
- b) Entity
- c) Boundary
- d) Business

View Answer

Answer: c

Explanation: The answer is self-explanatory.

7. Which of the following statement is incorrect regarding the Class-responsibility-collaborator (CRC) modeling ?

- a) All use-case scenarios (and corresponding use-case diagrams) are organized into categories in CRC modelling
- b) The review leader reads the use-case deliberately
- c) Only developers in the review (of the CRC model) are given a subset of the CRC model index cards
- d) All of the mentioned

View Answer

Answer: c

Explanation: All participants in the review (of the CRC model) are given a subset of the CRC model index cards.

8. A data object can encapsulates processes and operation as well.

- a) True
- b) False

View Answer

Answer: b

Explanation: A data object encapsulates data only. There is no reference within a data object to operations that act on the data.

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Software Engineering Questions and Answers – Software Evolution

1. The two dimensions of spiral model are

- a) diagonal, angular
- b) radial, perpendicular
- c) radial, angular
- d) diagonal, perpendicular

View Answer

Answer: c

Explanation: The radial dimension depicts the cumulative costs and the angular dimension depicts the progress made in completing each cycle. Each loop of the spiral model represents a phase.

2. The Incremental Model is combination of elements of

- a) Build & FIX Model & Waterfall Model
- b) Linear Model & RAD Model
- c) Linear Model & Prototyping Model
- d) Waterfall Model & RAD Model

View Answer

Answer: c

Explanation: Each linear sequence produces a deliverable “increment” of the software system, particularly needed in case of quick delivery of a limited functionality system.

3. Model preferred to create client/server applications is

- a) WINWIN Spiral Model
- b) Spiral Model
- c) Concurrent Model
- d) Incremental Model

View Answer

Answer: c

Explanation: In case of client/server applications, the concurrent process model specifies activities in two dimensions: a system dimension and a component dimension. Hence Concurrency is achieved by these two activities occurring simultaneously and can be modeled using the state-oriented approach.

4. Identify the correct statement with respect to Evolutionary development:

- a) Evolutionary development usually has two flavors; exploratory development, and throw-away prototyping
- b) Very large projects are usually done using evolutionary development based approach
- c) It facilitates easy project management, through the high volume of documentation it generates
- d) Sometimes the construction of a throw-away prototype is not followed by a re- implementation of the software system using a more structured approach

View Answer

Answer: a

Explanation: Evolutionary development usually has two flavors; exploratory development, and throw-away prototyping.

5. Spiral model was developed by

- a) Victor Bisili
- b) Berry Boehm
- c) Bev Littlewood
- d) Roger Pressman

View Answer

Answer: b

Explanation: Berry Boehm in 1986 in his Article "A spiral model of software development and enhancement".

6. Software evolution does not comprises:

- a) Development activities
- b) Negotiating with client
- c) Maintenance activities
- d) Re-engineering activities

View Answer

Answer: b

Explanation: Software evolution refers to the study and management of the process of making changes to software over time. Thus it comprises rest three options.

7. Processes for evolving a software product depend on:

- a) Type of software to be maintained
- b) Development processes used
- c) Skills and experience of the people involved
- d) All of the mentioned

View Answer

Answer: d

Explanation: Processes used for software evolution depend on all these factors.

8. Which technique is applied to ensure the continued evolution of legacy systems ?

- a) Forward engineering
- b) Reverse Engineering
- c) Reengineering
- d) Reverse Engineering and Reengineering

View Answer

Answer: d

Explanation: Processes used for software evolution depend rely on these two techniques.

9. Program modularization and Source code translation are the activities of _____

- a) Forward engineering
- b) Reverse Engineering
- c) Reengineering
- d) Reverse Engineering and Reengineering

View Answer

Answer: c

Explanation: Reengineering is the examination and alteration of a subject system to reconstitute it in a new form and the subsequent implementation of the new form.

10. Reverse engineering is the last activity in a reengineering project.

- a) True
- b) False

View Answer

Answer: b

Explanation: Reverse engineering is often the initial activity in a reengineering project.

11. The cost of re-engineering is often significantly less than the costs of developing new software.

- a) True
- b) False

View Answer

Answer: a

Explanation: There is a high risk in new software development. There may be development problems, staffing problems and specification problems, thereby increasing the cost.

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Software Engineering Questions and Answers – Sociotechnical Systems

1. A sociotechnical system is a system that includes

- a) people
- b) software
- c) hardware
- d) all of the mentioned

View Answer

Answer: d

Explanation: A sociotechnical system is a system that includes people, software, and hardware to show that you need to take a systems perspective on security and dependability.

2. Which layer is missing in the sociotechnical system stack as shown below:



- a) organizational layer
- b) application layer
- c) physical layer
- d) transport layer

View Answer

Answer: b

Explanation: The application layer This layer delivers the application-specific functionality that is required.

3. Consider an example of a system which has a police command and control system that may include a geographical information system to provide details of the location of incidents. What kind of system the example represents?

- a) Complex System
- b) Technical computer-based system
- c) Sociotechnical System
- d) Both Complex and Sociotechnical System

View Answer

Answer: d

Explanation: Complex systems are usually hierarchical and so include other systems.

4. Which property of a sociotechnical system varies depending on how the component assemblies are arranged and connected?

- a) security
- b) usability

- c) volume
 - d) reliability
- View Answer

Answer: c

Explanation: The volume of a system (the total space occupied) varies depending on how the component assemblies are arranged and connected.

5. Which property of a sociotechnical system depends on the technical system components, its operators, and its operating environment?

- a) security
 - b) usability
 - c) volume
 - d) reliability
- View Answer

Answer: b

Explanation: Usability reflects how easy it is to use the system.

6. In a sociotechnical system, you need to consider reliability from perspectives namely:

- a) only software reliability
 - b) only hardware reliability
 - c) hardware and software reliability
 - d) hardware, software and operator reliability
- View Answer

Answer: d

Explanation: In a sociotechnical system, you need to consider reliability from all three perspectives.

7. There are _____ overlapping stages in the lifetime of large and complex sociotechnical systems.

- a) two
 - b) three
 - c) four
 - d) five
- View Answer

Answer: b

Explanation: The stages are Procurement, Development and Operation.

8. Sociotechnical systems are deterministic.

- a) True
 - b) False
- View Answer

Answer: b

Explanation: Sociotechnical systems are non-deterministic partly because they include people and partly because changes to the hardware, software, and data in these systems are so frequent

9. What are the two ways to view the human error of a sociotechnical system?

- a) hardware and software approach
 - b) management and users approach
 - c) person and systems approach
 - d) all of the mentioned
- View Answer

Answer: c

Explanation: The answer is self explanatory.

10. Human and organizational factors such as organizational structure and politics have a significant effect on the operation of sociotechnical systems.

- a) True
- b) False

View Answer

Answer: a

Explanation: As people are a part of the system, hence they affect the sociotechnical system.

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Software Engineering Questions and Answers – Dependability and Security

1. A characteristic of a software system that can lead to a system error is known as?

- a) Human error or mistake
- b) System fault
- c) System error
- d) System failure

View Answer

Answer: b

Explanation: None.

2. An erroneous system state that can lead to system behavior that is unexpected by system users is known as?

- a) Human error or mistake
- b) System fault
- c) System error
- d) System failure

View Answer

Answer: c

Explanation: None.

3. An event that occurs at some point in time when the system does not deliver a service as expected by its users is called _____

- a) Human error or mistake
- b) System fault
- c) System error
- d) System failure

View Answer

Answer: d

Explanation: None.

4. A chemical plant system may detect excessive pressure and open a relief valve to reduce these pressures before an explosion occurs. What kind of dependability and security issue the example states?

- a) Hazard avoidance
- b) Damage limitation
- c) Hazard detection
- d) Hazard detection and removal

View Answer

Answer: d

Explanation: The system is designed so that hazards are detected and removed before they result in an accident.

5. An aircraft engine normally includes automatic fire extinguishers. What kind of dependability and security issue the example states?

- a) Hazard avoidance
- b) Damage limitation
- c) Hazard detection
- d) Hazard detection and removal

View Answer

Answer: b

Explanation: The system may include protection features that minimize the damage that may result from an accident.

6. An assessment of the worst possible damage that could result from a particular hazard is known as

- a) Risk

- b) Hazard probability
 - c) Hazard severity
 - d) Mishap
- View Answer

Answer: c

Explanation: Hazard severity can range from catastrophic, where many people are killed, to minor, where only minor damage results. When an individual death is a possibility, a reasonable assessment of hazard severity is 'very high'.

7. which of the following terms is a measure of the probability that the system will cause an accident?
- a) Risk
 - b) Hazard probability
 - c) Accident
 - d) Damage
- View Answer

Answer: a

Explanation: The risk is assessed by considering the hazard probability, the hazard severity, and the probability that the hazard will lead to an accident.

8. A weakness in a computer-based system that may be exploited to cause loss or harm is known as?
- a) Vulnerability
 - b) Attack
 - c) Threat
 - d) Exposure
- View Answer

Answer: a

Explanation: None.

9. A password checking system that disallows user passwords that are proper names or words that are normally included in a dictionary is an example of _____ with respect to security systems.
- a) risk
 - b) control
 - c) attack
 - b) asset
- View Answer

Answer: b

Explanation: A control protective measure that reduces a system's vulnerability.

10. The safety of a system is a system attribute that reflects the system's ability to operate, normally or abnormally, without injury to people or damage to the environment.
- a) True
 - b) False
- View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Dependability and Security Specification

1. How many stages are there in Risk-driven requirements specification?

- a) three
- b) four
- c) five
- d) six

View Answer

Answer: b

Explanation: These include Risk identification, Risk analysis, Risk reduction and Risk decomposition

2. Consider a case where the system is unavailable and cannot deliver its services to users. What type of failure is being described here?

- a) Loss of service
- b) Incorrect service delivery
- c) System/data corruption
- d) None of the mentioned

View Answer

Answer: a

Explanation: One may separate this into loss of critical services and loss of non-critical services, where the consequences of a failure in non-critical services are less than the consequences of critical service failure.

3. Consider a case where the failure of the system causes damage to the system itself or its data. What type of failure is being described here?

- a) Loss of service
- b) Incorrect service delivery
- c) System/data corruption
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

4. POFOD stands for

- a) Possibility of failure of data
- b) Probability of failure of data
- c) Possibility of failure on demand
- d) Probability of failure on demand

View Answer

Answer: d

Explanation: None.

5. Which reliability metric sets out the probable number of system failures that are likely to be observed relative to a certain time period?

- a) POFOD
- b) ROCOF
- c) AVAIL
- d) None of the mentioned

View Answer

Answer: b

Explanation: Rate of occurrence of failures (ROCOF) sets out the probable number of system failures that are likely to be observed relative to the number of system executions.

6. Which of the following is not a functional reliability requirement for a system?

- a) Checking requirements
- b) Recovery requirements
- c) Redundancy requirements
- d) Ambiguous requirements

View Answer

Answer: d

Explanation: All the options are correct except option d.

7. To specify security requirements, one should identify the risks that are to be dealt with.

- a) True
- b) False

View Answer

Answer: b

Explanation: To specify security requirements, one should identify the assets that are to be dealt with.

8. The aim of preliminary risk analysis and assessment process is to derive security requirements for the system as a whole.

- a) True
- b) False

View Answer

Answer: a

Explanation: In preliminary risk analysis stage, decisions on the detailed system requirements, the system design, or the implementation technology have not been made.

9. At which stage of risk analysis specification, the additional security requirements take account of the technologies used in building the system and system design and implementation decisions?

- a) Preliminary risk analysis
- b) Life-cycle risk analysis
- c) Operational risk analysis
- d) All of the mentioned

View Answer

Answer: b

Explanation: This risk assessment takes place during the system development life cycle after design choices have been made..

10. Which reliability requirements are concerned with maintaining copies of the system?

- a) Checking requirements
- b) Recovery requirements
- c) Redundancy requirements
- d) Ambiguous requirements

View Answer

Answer: b

Explanation: These requirements are geared to helping the system recover after a failure has occurred.

Software Engineering Questions and Answers – Dependability Engineering

1. Which of the following examples does not involve dependability engineering ?

- a) Medical Systems
- b) Power Systems
- c) Library Management
- d) Telecommunications

View Answer

Answer: c

Explanation: Software customers expect all software to be dependable. However, for non-critical applications such as certain management systems, they may be willing to accept some system failures.

2. What is the term for development process organised such that faults in the system are detected and repaired before delivery to the customer ?

- a) Fault Avoidance
- b) Fault detection
- c) Fault tolerance
- d) None of the mentioned

View Answer

Answer: a

Explanation: In Fault Avoidance, the system is developed in such a way that human error is avoided and thus system faults are minimised.

3. What is the term for a system that is designed such that the faults in the delivered software do not result in system failure ?

- a) Fault Avoidance
- b) Fault detection
- c) Fault tolerance
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

4. Which process characteristic with respect to Dependability Engineering is mentioned by the statement: “The process should be understandable by people apart from process participants”?

- a) Diverse
- b) Documentable
- c) Auditable
- d) None of the mentioned

View Answer

Answer: c

Explanation: It means that process standards are being followed and make suggestions for process improvement.

5. Which of the following is not a Protection system ?

- a) System to stop a train if it passes a red light
- b) System to indicate not returning of the library book
- c) System to shut down a reactor if temperature/pressure are too high
- d) None of the mentioned

View Answer

Answer: b

Explanation: A Protection system is a specialized system that is associated with some other control system, which can take emergency action if a failure occurs.

6. The use of a well-defined, repeatable process is essential if faults in a system are to be minimized.

- a) True
- b) False

View Answer

Answer: a

Explanation: The answer is self explanatory.

7. Which of the following is a Strategy to achieve Software diversity ?

- a) Different programming languages
- b) Different design methods and tools
- c) Explicit specification of different algorithms
- d) All of the mentioned

View Answer

Answer: d

Explanation: Diversity means to provide the same functionality in different ways so that critical components of a dependable system will not fail in the same way.

8. Exception handling is a mechanism to provide some fault avoidance.

- a) True
- b) False

View Answer

Answer: b

Explanation: Exception handling is a mechanism to provide some fault tolerance.

9. Which of the following is a bad practice of Dependable programming ?

- a) Limit the visibility of information in a program
- b) Check array bounds
- c) Check all inputs for validity
- d) None of the mentioned

View Answer

Answer: d

Explanation: All the options are good practices to achieve Dependability Engineering.

10. What is a Range check?

- a) Check that the input does not exceed some maximum size e.g. 40 characters for a name
- b) Check that the input falls within a known range
- c) Use information about the input to check if it is reasonable rather than an extreme value
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

Software Engineering Questions and Answers – Security Engineering

1. Which of the following is a layer of protection for Security ?

- a) Platform-level protection
- b) Application-level protection
- c) Record-level protection
- d) All of the mentioned

View Answer

Answer:d

Explanation: None.

2. Security engineering is only concerned with maintenance of systems such that they can resist malicious attacks.

- a) True
- b) False

View Answer

Answer:b

Explanation: Security engineering is concerned with maintenance as well as development of such systems.

3. What are security controls ?

- a) Controls that are intended to ensure that attacks are unsuccessful
- b) Controls that are intended to detect and repel attacks
- c) Controls that are intended to support recovery from problems
- d) All of the mentioned

View Answer

Answer:d

Explanation: All the options define a security control property.

4. Controls that are intended to repel attacks is analogous to _____ in dependability engineering.

- a) Fault avoidance
- b) Fault tolerance
- c) Fault detection
- d) None of the mentioned

View Answer

Answer:b

Explanation: Here the system is designed so that faults in the delivered software do not result in system failure.

5. Controls that are intended to ensure that attacks are unsuccessful is analogous to _____ in dependability engineering.

- a) Fault avoidance
- b) Fault tolerance
- c) Fault detection
- d) Fault Recovery

View Answer

Answer:a

Explanation: In Fault avoidance the system is developed in such a way that human error is avoided and thus system faults are minimised.

6. What is Life cycle risk assessment ?

- a) Risk assessment before the system has been deployed
- b) Risk assessment while the system is being developed
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer:c

Explanation: None.

7. A system resource that has a value and has to be protected is known as

- a) Asset
- b) Control
- c) Vulnerability
- d) None of the mentioned

View Answer

Answer:a

Explanation: The answer is self explanatory.

8. An impersonation of an authorised user is an example of a security threat.

- a) True
- b) False

View Answer

Answer:b

Explanation: It is a security attack.

9. The records of each patient that is receiving or has received treatment resembles which security concept ?

- a) Asset
- b) Threat
- c) Vulnerability
- d) Control

View Answer

Answer:a

Explanation: Asset is a system resource that has a value and has to be protected.

10. Circumstances that have potential to cause loss or harm is known as

- a) Attack
- b) Threat
- c) Vulnerability
- d) Control

View Answer

Answer:b

Explanation: The answer is self explanatory.

Software Engineering Questions and Answers – Dependability and Security Assurance

1. Static Analysis involves executing a program.

- a) True
- b) False

View Answer

Answer: b

Explanation: Static analysis techniques are system verification techniques that don't involve executing a program.

2. Which of the following is a technique covered in Static Analysis ?

- a) Formal verification
- b) Model checking
- c) Automated program analysis
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

3. Select the disadvantage of using Formal methods

- a) Concurrent systems can be analysed to discover race conditions that might lead to deadlock
- b) Producing a mathematical specification requires a detailed analysis of the requirements
- c) They require the use of specialised notations that cannot be understood by domain experts
- d) All of the mentioned

View Answer

Answer: c

Explanation: Formal methods are the ultimate static verification technique that may be used at different stages in the development process.

4. Which of the following is incorrect with respect to Model Checking?

- a) Model checking is particularly valuable for verifying concurrent systems
- b) Model checking is computationally very inexpensive
- c) The model checker explores all possible paths through the model
- d) All of the mentioned

View Answer

Answer: b

Explanation: Model checking is very expensive. It is only practical to use it in the verification of small to medium sized critical systems.

5. Choose the fault class in which the following automated static analysis check would fall: "Variables declared but never used".

- a) Control Faults
- b) Data Faults
- c) Input/Output Faults
- d) Interface faults

View Answer

Answer: b

Explanation: None.

6. Choose the fault class in which the following automated static analysis check would fall: "Unreachable code".

- a) Control Faults
- b) Data Faults
- c) Input/Output Faults
- d) Interface faults

View Answer

Answer: a

Explanation: None.

7. Choose the fault class in which the following automated static analysis check would fall: "Non-usage of the results of functions".

- a) Storage management faults
- b) Data Faults
- c) Input/Output Faults
- d) Interface faults

View Answer

Answer: d

Explanation: None.

8. Static analysis is now routinely used in the development of many safety and security critical systems.

- a) True
- b) False

View Answer

Answer: a

Explanation: The static analyzer can discover areas of vulnerability such as buffer overflows or unchecked inputs

9. Which level of Static Analysis allows specific rules that apply to a program to be checked ?

- a) Characteristic error checking
- b) User-defined error checking
- c) Assertion checking
- d) All of the mentioned

View Answer

Answer: b

Explanation: Users of a programming language define error patterns, thus extending the types of error that can be detected.

10. Choose the fault class in which the following automated static analysis check would fall: "Pointer Arithmetic".

- a) Storage management faults
- b) Data Faults
- c) Input/Output Faults
- d) Interface faults

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Software Design

1. Which is the first step in the software development life cycle ?

- a) Analysis
- b) Design
- c) Problem/Opportunity Identification
- d) Development and Documentation

View Answer

Answer: c

Explanation: None.

2. Which tool is use for structured designing ?

- a) Program flowchart
- b) Structure chart
- c) Data-flow diagram
- d) Module

View Answer

Answer: b

Explanation: A Structure Chart (SC) in software engineering and organizational theory, is a chart which shows the breakdown of a system to its lowest manageable levels.

3. A step by step instruction used to solve a problem is known as

- a) Sequential structure
- b) A List
- c) A plan
- d) An Algorithm

View Answer

Answer: d

Explanation: None.

4. In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project.

- a) documentation
- b) flowchart
- c) program specification
- d) design

View Answer

Answer: c

Explanation: Program specification is the definition of what a computer program is expected to do.

5. Actual programming of software code is done during the _____ step in the SDLC.

- a) Maintenance and Evaluation
- b) Design
- c) Analysis
- d) Development and Documentation

View Answer

Answer: d

Explanation: The developer has to find in the technical documentation enough information to start coding.

6. Who designs and implement database structures.

- a) Programmers

- b) Project managers
 - c) Technical writers
 - d) Database administrators
- View Answer

Answer: d

Explanation: The role of database administrators includes the development and design of database strategies, system monitoring and improving database performance and capacity, and planning for future expansion requirements.

7. _____ is the process of translating a task into a series of commands that a computer will use to perform that task.

- a) Project design
- b) Installation
- c) Systems analysis
- d) Programming

View Answer

Answer: d

Explanation: None.

8. Debugging is:

- a) creating program code
- b) finding and correcting errors in the program code
- c) identifying the task to be computerized
- d) creating the algorithm

View Answer

Answer: b

Explanation: Debugging is a methodical process of finding and reducing the number of bugs, or defects, in a computer program or a piece of electronic hardware, thus making it behave as expected.

9. In Design phase, which is the primary area of concern ?

- a) Architecture
- b) Data
- c) Interface
- d) All of the mentioned

View Answer

Answer: d

Explanation: Part of the design phase is to create structural and behavioral models of the system which is covered by architecture, data and the interface of the product.

10. The importance of software design can be summarized in a single word which is:

- a) Efficiency
- b) Accuracy
- c) Quality
- d) Complexity

View Answer

Answer: c

Explanation: Software functional quality reflects how well it complies with or conforms to a given design, based on functional requirements or specifications.

11. Cohesion is a qualitative indication of the degree to which a module

- a) can be written more compactly
- b) focuses on just one thing
- c) is able to complete its function in a timely manner
- d) is connected to other modules and the outside world

View Answer

Answer: b

Explanation: Cohesion of a single module/component is the degree to which its responsibilities form a meaningful unit.

12. Coupling is a qualitative indication of the degree to which a module

- a) can be written more compactly
- b) focuses on just one thing
- c) is able to complete its function in a timely manner
- d) is connected to other modules and the outside world

View Answer

Answer: d

Explanation: Coupling between modules/components is their degree of mutual interdependence.

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Software Engineering Questions and Answers – Modularity in Software Design

1. Java packages and Fortran subroutine are examples of _____
- a) Functions
 - b) Modules
 - c) Classes
 - d) Sub procedures
- View Answer

Answer: b

Explanation: A modular system consist of well defined manageable units with well defined interfaces among the units.

2. Which of the property of software modularity is incorrect with respect to benefits software modularity?
- a) Modules are robust
 - b) Module can use other modules
 - c) Modules Can be separately compiled and stored in a library
 - d) Modules are mostly dependent
- View Answer

Answer: d

Explanation: Modularity cannot bring benefits unless the modules are autonomous or independent.

3. _____ is a measure of the degree of interdependence between modules.
- a) Cohesion
 - b) Coupling
 - c) None of the mentioned
 - d) All of the mentioned
- View Answer

Answer: b

Explanation: Coupling or dependency is the degree to which each program module relies on each one of the other modules.

4. Which of the following is the best type of module coupling?
- a) Control Coupling
 - b) Stamp Coupling
 - c) Data Coupling
 - d) Content Coupling
- View Answer

Answer: c

Explanation: The dependency between module A and B is said to be data coupled if their dependency is based on the fact they communicate by only passing of data.

5. Which of the following is the worst type of module coupling?
- a) Control Coupling
 - b) Stamp Coupling
 - c) External Coupling
 - d) Content Coupling
- View Answer

Answer: c

Explanation: Content coupling occurs when module A changes data of module B or when control is passed from one module to the middle of another.

6. Which of the following is the worst type of module cohesion?

- a) Logical Cohesion
- b) Temporal Cohesion
- c) Functional Cohesion
- d) Coincidental Cohesion

View Answer

Answer: d

Explanation: Coincidental cohesion exists in modules that contain instructions that have little or no relationship to one another.

7. Which of the following is the best type of module cohesion?

- a) Functional Cohesion
- b) Temporal Cohesion
- c) Functional Cohesion
- d) Sequential Cohesion

View Answer

Answer: a

Explanation: Functional Cohesion is a type of cohesion in which the tasks performed by a software module all contribute to the performance of a single function.

8. A software engineer must design the modules with the goal of high cohesion and low coupling.

- a) True
- b) False

View Answer

Answer: a

Explanation: If the software is not properly modularized, a host of seemingly trivial enhancement or changes will result into death of the project.

9. In what type of coupling, the complete data structure is passed from one module to another?

- a) Control Coupling
- b) Stamp Coupling
- c) External Coupling
- d) Content Coupling

View Answer

Answer: b

Explanation: None.

10. If all tasks must be executed in the same time-span, what type of cohesion is being exhibited?

- a) Functional Cohesion
- b) Temporal Cohesion
- c) Functional Cohesion
- d) Sequential Cohesion

View Answer

Answer: b

Explanation: A Module exhibits temporal cohesion when it contains tasks that are related by the fact that all tasks must be executed in the same time-span.

Software Engineering Questions and Answers – Function Oriented Design using Structured Analysis Structured Design

1. SA/SD features are obtained from which of the methodologies?

- a) Constantine and Yourdon methodology
- b) DeMarco and Yourdon methodology
- c) Gane and Sarson methodology
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

2. Which of the following is not an activity of Structured Analysis (SA) ?

- a) Functional decomposition
- b) Transformation of a textual problem description into a graphic model
- c) All the functions represented in the DFD are mapped to a module structure
- d) All of the mentioned

View Answer

Answer: c

Explanation: The module structure is the software architecture.

3. To arrive at a form which is suitable for implementation in some programming language is the purpose of

- a) Structured Analysis (SA)
- b) Structured Design (SD)
- c) Detailed Design (DD)
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

4. The results of structured analysis can be easily understood by ordinary customers.

- a) True
- b) False

View Answer

Answer: a

Explanation: The results of structured analysis directly represents customer's perception of the problem and uses customer's terminology for naming different functions and data.

5. Structured Analysis is based on the principle of Bottom-Up Approach.

- a) True
- b) False

View Answer

Answer: b

Explanation: Structured Analysis follows uses decomposition approach.

6. The context diagram is also known as

- a) Level-0 DFD
- b) Level-1 DFD
- c) Level-2 DFD
- d) All of the mentioned

View Answer

Answer: a

Explanation: Context diagram captures the various entities external to the system interacting with it and data flow occurring between the system and the external entities.

7. A directed arc or line in DFD represents

- a) Data Store
- b) Data Process
- c) Data Flow
- d) All of the mentioned

View Answer

Answer: c

Explanation: It resembles data flow in the direction of the arrow.

8. A DFD is always accompanied by a data dictionary.

- a) True
- b) False

View Answer

Answer: a

Explanation: A data dictionary lists all data items appearing in a DFD including definition and data names.

9. Which of the following is a function of CASE Tool?

- a) Supporting Structured analysis and design (SA/SD)
- b) Maintaining the data dictionary
- c) Checking whether DFDs are balanced or not
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

10. Data Store Symbol in DFD represents a

- a) Physical file
- b) Data Structure
- c) Logical file
- d) All of the mentioned

View Answer

Answer: d

Explanation: A logical file can be a data structure or a physical file on disk.

Software Engineering Questions and Answers – Object Oriented Software Design – 1

1. Choose the incorrect statement in terms of Objects.

- a) Objects are abstractions of real-world
- b) Objects can't manage themselves
- c) Objects encapsulate state and representation information
- d) All of the mentioned

View Answer

Answer: b

Explanation: Objects are independent.

2. What encapsulates both data and data manipulation functions ?

- a) Object
- b) Class
- c) Super Class
- d) Sub Class

View Answer

Answer: a

Explanation: None.

3. Which of the following is a mechanism that allows several objects in a class hierarchy to have different methods with the same name?

- a) Aggregation
- b) Polymorphism
- c) Inheritance
- d) All of the mentioned

View Answer

Answer: b

Explanation: In polymorphism instances of each subclass will be free to respond to messages by calling their own version of the method.

4. Inherited object classes are self-contained.

- a) True
- b) False

View Answer

Answer: b

Explanation: Inherited object classes are not self-contained. They cannot be understood without reference to their super-classes.

5. Which of the following points related to Object-oriented development (OOD) is true?

- a) OOA is concerned with developing an object model of the application domain
- b) OOD is concerned with developing an object-oriented system model to implement requirements
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: The answer is in support with the OOD.

6. How is generalization implemented in Object Oriented programming languages?

- a) Inheritance
- b) Polymorphism
- c) Encapsulation
- d) Abstract Classes

View Answer

Answer: a

Explanation: None.

7. Which of the following is a disadvantage of OOD ?

- a) Easier maintenance
- b) Objects may be understood as stand-alone entities
- c) Objects are potentially reusable components
- d) None of the mentioned

View Answer

Answer: d

Explanation: All the options define the characteristics of OOD.

8. Which of the following describes "Is-a-Relationship" ?

- a) Aggregation
- b) Inheritance
- c) Dependency
- d) All of the mentioned

View Answer

Answer: b

Explanation: None.

9. Object that collects data on request rather than autonomously is known as

- a) Active Object
- b) Passive Object
- c) Multiple instance
- d) None of the mentioned

View Answer

Answer: b

Explanation: A passive object holds data, but does not initiate control.

10. Objects are executed

- a) sequentially
- b) in Parallel
- c) sequentially & Parallel
- d) none of the mentioned

View Answer

Answer: c

Explanation: Objects may be distributed and may execute sequentially or in parallel.

Software Engineering Questions and Answers – Object Oriented Software Design – 2

1. How many layers are present in the OO design pyramid?

- a) three
- b) four
- c) five
- d) one

View Answer

Answer: b

Explanation: The four layers are: Subsystem layer, class and object layer, message layer and responsibilities layer

2. Which of the following early OOD methods incorporates both a “micro development process” and a “macro development process.”?

- a) Booch method
- b) Rumbaugh method
- c) Wirfs-Brock method
- d) Coad and Yourdon method

View Answer

Answer: a

Explanation: The macro development process includes the architectural planning and micro developments process defines rules that govern the use of operations and attributes and the domain-specific policies for memory management, error handling, and other infrastructure functions.

3. Grady Booch, James Rumbaugh, and Ivar Jacobson combined the best features of their individual object-oriented analysis into a new method for object oriented design known as

- a) HTML
- b) XML
- c) UML
- d) SGML

View Answer

Answer: c

Explanation: The Unified Modeling Language (UML) has become widely used throughout the industry as the standard approach to OOD.

4. A design description of an object is known as a class

- a) instance
- b) object
- c) case
- d) both instance and object

View Answer

Answer: d

Explanation: None.

5. Which of the following is conceptually similar to objects?

- a) PACKAGE
- b) PROC
- c) PRIVATE
- d) None of the mentioned

View Answer

Answer: a

Explanation: A package is a namespace that organizes a set of related classes and interfaces.

6. A design description in OOD includes

- a) Protocol Description
- b) Implementation Description
- c) Type Description
- d) both Protocol and Implementation Description

View Answer

Answer: d

Explanation: None.

7. Which of the following is not an operation as per OOD algorithms and data structures?

- a) operations that manipulate data in some way
- b) operations that perform a computation
- c) operations that check for syntax errors
- d) operations that monitor an object for the occurrence of a controlling event

View Answer

Answer: c

Explanation: Operations that check for syntax errors is concerned with the programming language used, so it will be handled by the compiler.

8. Throughout the OOD process, a software engineer should look for every opportunity for creating new design process.

- a) True
- b) False

View Answer

Answer: b

Explanation: A software engineer should look for every opportunity to reuse existing design patterns whenever they meet the needs of the design rather than creating new ones.

Software Engineering Questions and Answers – Web Engineering Project Metrics

1. The user has no control over the contents of a static web page.

- a) True
- b) False

View Answer

Answer: a

Explanation: Static web pages are just for information purposes.

2. Which metric gives the idea about the contents on a web page ?

- a) Word Token
- b) Word Count
- c) Word Size
- d) Word Length

View Answer

Answer: b

Explanation: The word count metric gives the total number of words on a web page.

3. How is the complexity of a web page related to link count ?

- a) Directly
- b) Indirectly
- c) No relation
- d) All of the mentioned

View Answer

Answer: a

Explanation: If link count is more, complexity will be more.

4. It is expected to have less number of connections for a good web application.

- a) True
- b) False

View Answer

Answer: a

Explanation: More the link count, more the complexity and the web page dependence factor will increase.

5. Number of dynamic web pages provides an idea about _____ for a web page that is to be built.

- a) size
- b) complexity
- c) effort
- d) all of the mentioned

View Answer

Answer: d

Explanation: None.

6. Which of the following web engineering metric measures the extent of relatedness between two or more web pages ?

- a) Number of Static Content Objects
- b) Number of Dynamic Content Objects
- c) Web Page Similarity
- d) Number of Internal Page Links

View Answer

Answer: c

Explanation: None.

7. Which of the following is not a classification of the web engineering metric, Web Page Similarity ?

- a) Content based
- b) Link based
- c) Usage based
- d) Traffic based

View Answer

Answer: d

Explanation: Similarity between two web pages is not judged upon its traffic activity.

8. The static content objects are dependent on the actions of the user.

- a) True
- b) False

View Answer

Answer: b

Explanation: Dynamic Objects are user dependent

9. Link based measures rely on _____ structure of a web graph to obtain related pages.

- a) Embedded
- b) Hyperlink
- c) Dynamic
- d) All of the mentioned

View Answer

Answer: b

Explanation: Only option b answers the blank, rest are not in accordance to the question.

10. Which of the following is not a web engineering project metric ?

- a) Number of Static Content Objects
- b) Number of Dynamic Content Objects
- c) Number of Inherited Objects
- d) Word Count

View Answer

Answer: c

Explanation: There is no such metric as an inherited object's count.

Software Engineering Questions and Answers – Metrics Analysis

1. Which of the following is not a metric for design model?

- a) Interface design metrics
- b) Component-level metrics
- c) Architectural metrics
- d) Complexity metrics

View Answer

Answer: d

Explanation: Complexity metrics measure the logical complexity of source code.

2. Statement and branch coverage metrics are part of

- a) Analysis Model
- b) Testing
- c) Design Model
- d) Source Code

View Answer

Answer: b

Explanation: These metrics lead to the design of test cases that provide program coverage.

3. Function Points in software engineering was first proposed by

- a) Booch
- b) Boehm
- c) Albrecht
- d) Jacobson

View Answer

Answer: c

Explanation: First proposed by Albrecht in 1979, hundreds of books and papers have been written on functions points since then.

4. How many Information Domain Values are used for Function Point Computation?

- a) three
- b) four
- c) five
- d) six

View Answer

Answer: c

Explanation: The five values are: External Inputs, External Outputs, External Inquiries, Internal Logical Files and External Interface Files.

5. Function Point Computation is given by the formula

- a) $FP = [\text{count total} * 0.65] + 0.01 * \sum(F_i)$
- b) $FP = \text{count total} * [0.65 + 0.01 * \sum(F_i)]$.
- c) $FP = \text{count total} * [0.65 + 0.01] * \sum(F_i)$
- d) $FP = [\text{count total} * 0.65 + 0.01] * \sum(F_i)$

View Answer

Answer: b

Explanation: Option b is the correct formula for Function Point Computation.

6. Architectural Design Metrics are _____ in nature.

- a) Black Box
- b) White Box

- c) Gray Box
 - d) Green Box
- View Answer

Answer: a

Explanation: They are “black box” in that they do not require any knowledge of the inner workings of a particular software component.

7. Structural complexity of a module i is given as $S(i) = f^*f(i)$. What does f symbolizes here?

- a) “fan check-out” of module i
- b) “fan check-in” of module i
- c) “fan in” of module i
- d) “fan out” of module i

View Answer

Answer: d

Explanation: Fan out is number of modules directly invoked by module i .

8. SMI stands for

- a) Software Mature Indicator
- b) Software Maturity Index
- c) Software Mature Index
- d) Software Maturity Indicator

View Answer

Answer: b

Explanation: None.

9. As the SMI approaches 1.0, the software product starts becoming unstable

- a) True
- b) False

View Answer

Answer: b

Explanation: As the SMI approaches 1.0, the software product begins to stabilize.

10. $SMI = [Mt - (Fa + Fc + Fd)]/Mt$. Here Mt is the number of modules

- a) in the current release
- b) in the current release that have been changed
- c) from the preceding release that were deleted in the current release
- d) none of the mentioned

View Answer

Answer: a

Explanation: None.

11. The amount of time that the software is available for use is known as

- a) Reliability
- b) Usability
- c) Efficiency
- d) Functionality

View Answer

Answer: a

Explanation: None.

12. Usability in metric analysis is defined as the degree to which the software

- a) stated needs
- b) is easy to use
- c) makes optimal use of system resources
- d) none of the mentioned

View Answer

Answer: b

Explanation: None.

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Software Engineering Questions and Answers – Metrics for Quality Control

1. Size and Complexity are a part of

- a) Product Metrics
- b) Process Metrics
- c) Project Metrics
- d) All of the mentioned

View Answer

Answer: a

Explanation: Product Metrics describe the characteristics of product.

2. Cost and schedule are a part of

- a) Product Metrics
- b) Process Metrics
- c) Project Metrics
- d) All of the mentioned

View Answer

Answer: c

Explanation: Project Metrics describe the project characteristics and execution.

3. Number of errors found per person hours expended is an example of a

- a) measurement
- b) measure
- c) metric
- d) all of the mentioned

View Answer

Answer: c

Explanation: Metric is a quantitative measure of the degree to which a system, component, or process possesses a given attribute.

4. Which of the following is not categorized under Product Operation of McCall's Software Quality Factors?

- a) Flexibility
- b) Reliability
- c) Usability
- d) Integrity

View Answer

Answer: a

Explanation: Flexibility is a part of Product revision as per McCall's Software Quality Factors.

5. The arc-to-node ratio is given as $r = a/n$. What does 'a' represent in the ratio?

- a) maximum number of nodes at any level
- b) longest path from the root to a leaf
- c) number of modules
- d) lines of control

View Answer

Answer: d

Explanation: 'a' represents the arcs or the lines of control.

6. Which of the following is not categorized under Component-Level Design Metrics?

- a) Complexity Metrics
- b) Cohesion Metrics

- c) Morphology Metrics
- d) Coupling Metrics

View Answer

Answer: c

Explanation: Morphology metrics are a part of High level design metrics.

7. Percentage of modules that were inspected is a part of

- a) Product Metrics
- b) Process Metrics
- c) Project Metrics
- d) All of the mentioned

View Answer

Answer: b

Explanation: None.

8. Metric is the act of obtaining a measure.

- a) True
- b) False

View Answer

Answer: b

Explanation: Measurement is the act of obtaining a measure.

9. MTTC falls the the category of

- a) correctness
- b) integrity
- c) maintainability
- d) all of the mentioned

View Answer

Answer: c

Explanation: Mean time to change (MTTC) is the time it takes to analyze the change request, design an appropriate modification, implement the change, test it, and distribute the change to all users.

10. Identify the correct option with reference to Software Quality Metrics.

- a) $\text{Integrity} = [\text{Sigma}(1 - \text{threat})] * (1 - \text{security})$
- b) $\text{Integrity} = [1 - \text{Sigma}(\text{threat})] * (1 - \text{security})$
- c) $\text{Integrity} = [1 - \text{threat} * \text{Sigma}(1 - \text{security})]$.
- d) $\text{Integrity} = \text{Sigma}[1 - \text{threat} * (1 - \text{security})]$.

View Answer

Answer: d

Explanation: None.

Software Engineering Questions and Answers – Project Management

1. Which of the following is not project management goal?

- a) Keeping overall costs within budget
- b) Delivering the software to the customer at the agreed time
- c) Maintaining a happy and well-functioning development team
- d) Avoiding customer complaints

View Answer

Answer: d

Explanation: Projects need to be managed because professional software engineering is always subject to organizational budget and schedule constraints.

2. Project managers have to assess the risks that may affect a project.

- a) True
- b) False

View Answer

Answer: b

Explanation: Risk management involves anticipating risks that might affect the project schedule or the quality of the software being developed, and then taking action to avoid these risks.

3. Which of the following is not considered as a risk in project management?

- a) Specification delays
- b) Product competition
- c) Testing
- d) Staff turnover

View Answer

Answer: c

Explanation: Testing is a part of project, thus it can't be categorized as risk.

4. The process each manager follows during the life of a project is known as

- a) Project Management
- b) Manager life cycle
- c) Project Management Life Cycle
- d) All of the mentioned

View Answer

Answer: c

Explanation: A proven methodical life cycle is necessary to repeatedly implement and manage projects successfully.

5. A 66.6% risk is considered as

- a) very low
- b) low
- c) moderate
- d) high

View Answer

Answer: d

Explanation: The probability of the risk might be assessed as very low (<10%), low (10–25%), moderate (25–50%), high (50–75%), or very high (>75%).

6. Which of the following is/are main parameters that you should use when computing the costs of a software development project?

- a) travel and training costs

- b) hardware and software costs
- c) effort costs (the costs of paying software engineers and managers)
- d) all of the mentioned

View Answer

Answer: d

Explanation: Estimation involves working out how much effort is required to complete each activity and, from this, calculating the total cost of activities.

7. Quality planning is the process of developing a quality plan for

- a) team
- b) project
- c) customers
- d) project manager

View Answer

Answer: b

Explanation: The quality plan should set out the desired software qualities and describe how these are to be assessed.

8. Which of the following is incorrect activity for the configuration management of a software system?

- a) Internship management
- b) Change management
- c) Version management
- d) System management

View Answer

Answer: a

Explanation: Configuration management policies and processes define how to record and process proposed system changes, how to decide what system components to change, how to manage different versions of the system and its components, and how to distribute changes to customers.

9. Identify the sub-process of process improvement

- a) Process introduction
- b) Process analysis
- c) De-processification
- d) Process distribution

View Answer

Answer: b

Explanation: The current process is assessed, and process weaknesses and bottlenecks are identified.

10. An independent relationship must exist between the attribute that can be measured and the external quality attribute.

- a) True
- b) False

View Answer

Answer: b

Explanation: The value of the quality attribute must be related, in some way, to the value of the attribute than can be measured.

Software Engineering Questions and Answers – Project Planning

1. Which of the following is an important factor that can affect the accuracy and efficacy of estimates?

- a) Project size
- b) Planning process
- c) Project complexity
- d) Degree of structural uncertainty

View Answer

Answer: a

Explanation: As size increases, the interdependence among various elements of the software grows rapidly.

2. What describes the data and control to be processed?

- a) Planning process
- b) Software scope
- c) External hardware
- d) Project complexity

View Answer

Answer: b

Explanation: Functions described in the statement of scope are evaluated and in some cases refined to provide more detail prior to the beginning of estimation.

3. A number of independent investigators have developed a team-oriented approach to requirements gathering that can be applied to establish the scope of a project called

- a) JAD
- b) CLASS
- c) FAST
- d) None of the mentioned

View Answer

Answer: c

Explanation: Facilitated application specification techniques (FAST), this approach encourages the creation of a joint team of customers and developers who work together to identify the problem, propose elements of the solution, negotiate different approaches, and specify a preliminary set of requirements.

4. CLSS stands for

- a) conveyor line sorting system
- b) conveyor line sorting software
- c) conveyor line sorting speed
- d) conveyor line sorting specification

View Answer

Answer: a

Explanation: The conveyor line sorting system (CLSS) sorts boxes moving along a conveyor line. Each box is identified by a barcode that contains a part number and is sorted into one of six bins at the end of the line.

5. The project planner examines the statement of scope and extracts all important software functions which is known as

- a) Association
- b) Decomposition
- c) Planning process
- d) All of the mentioned

View Answer

Answer: b

Explanation: None

6. The environment that supports the software project is called

- a) CLSS
- b) SEE
- c) FAST
- d) CBSE

View Answer

Answer: b

Explanation: Software engineering environment (SEE), incorporates hardware and software.

7. Which of the following is not an option to achieve reliable cost and effort estimate?

- a) Base estimates on similar projects that have already been completed
- b) Use one or more empirical models for software cost and effort estimation
- c) Use relatively simple decomposition techniques to generate project cost and effort estimates
- d) The ability to translate the size estimate into human effort, calendar time, and dollars

View Answer

Answer: d

Explanation: None.

8. What can be used to complement decomposition techniques and offer a potentially valuable estimation approach in their own right?

- a) Automated estimation tools
- b) Empirical estimation models
- c) Decomposition techniques
- d) Both Automated estimation tools and Empirical estimation models

View Answer

Answer: b

Explanation: An estimation model for computer software uses empirically derived formulas to predict effort as a function of LOC or FP.

9. Which of the following is not achieved by an automated estimation tools?

- a) Predicting staffing levels
- b) Predicting software cost
- c) Predicting software schedules
- d) Predicting clients demands

View Answer

Answer: d

Explanation: Demands can vary from client to client.

10. Software project estimation can never be an exact science, but a combination of good historical data and systematic techniques can improve estimation accuracy.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Size and Cost Estimation of Software

1. Which of the following are parameters involved in computing the total cost of a software development project?

- a) Hardware and software costs
- b) Effort costs
- c) Travel and training costs
- d) All of the mentioned

View Answer

Answer: d

Explanation: All these are accounted for in estimating a software development cost.

2. Which of the following costs is not part of the total effort cost?

- a) Costs of networking and communications
- b) Costs of providing heating and lighting office space
- c) Costs of lunch time food
- d) Costs of support staff

View Answer

Answer: c

Explanation: This is incurred by the employees.

3. What is related to the overall functionality of the delivered software?

- a) Function-related metrics
- b) Product-related metrics
- c) Size-related metrics
- d) None of the mentioned

View Answer

Answer: a

Explanation: Productivity is expressed in terms of the amount of useful functionality produced in some given time. Function points and object points are the best-known metrics of this type.

4. A _____ is developed using historical cost information that relates some software metric to the project cost.

- a) Algorithmic cost modelling
- b) Expert judgement
- c) Estimation by analogy
- d) Parkinson's Law

View Answer

Answer: a

Explanation: The model uses a basic regression formula with parameters that are derived from historical project data and current as well as future project characteristics.

5. It is often difficult to estimate size at an early stage in a project when only a specification is available

- a) True
- b) False

View Answer

Answer: a

Explanation: Function-point and object-point estimates are easier to produce than estimates of code size but are often still inaccurate.

6. Which technique is applicable when other projects in the same analogy application domain have been completed?

- a) Algorithmic cost modelling

- b) Expert judgement
 - c) Estimation by analogy
 - d) Parkinson's Law
- View Answer

Answer: c

Explanation: The cost of a new project is estimated by analogy with these completed projects.

7. Which model assumes that systems are created from reusable components, scripting or database programming?

- a) An application-composition model
- b) A post-architecture model
- c) A reuse model
- d) An early design model

View Answer

Answer: a

Explanation: It is designed to make estimates of prototype development.

8. Which of the following states that work expands to fill the time available.

- a) CASE tools
- b) Pricing to win
- c) Parkinson's Law
- d) Expert judgement

View Answer

Answer: c

Explanation: The cost is determined by available resources rather than by objective assessment. If the software has to be delivered in 12 months and 5 people are available, the effort required is estimated to be 60 person-months.

9. Which model is used during early stages of the system design after the requirements have been established?

- a) An application-composition model
- b) A post-architecture model
- c) A reuse model
- d) An early design model

View Answer

Answer: d

Explanation: Estimates are based on function points, which are then converted to number of lines of source code. The formula follows the standard form discussed above with a simplified set of seven multipliers.

10. Which model is used to compute the effort required to integrate reusable components or program code that is automatically generated by design or program translation tools?

- a) An application-composition model
- b) A post-architecture model
- c) A reuse model
- d) An early design model

View Answer

Answer: c

Explanation: None.

11. The COCOMO model takes into account different approaches to software development, reuse, etc.

- a) True
- b) False

View Answer

Answer: b

Explanation: Its the COCOMO-2 model. COCOMO 2 incorporates a range of sub-models that produce increasingly detailed software estimates.

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Software Engineering Questions and Answers – Empirical Estimation Models

1. Which of the following uses empirically derived formulas to predict effort as a function of LOC or FP?

- a) FP-Based Estimation
- b) Process-Based Estimation
- c) COCOMO
- d) Both FP-Based Estimation and COCOMO

View Answer

Answer: d

Explanation: Function points and COCOMO are used to evaluate effort.

2. The empirical data that support most estimation models are derived from a vast sample of projects.

- a) True
- b) False

View Answer

Answer: b

Explanation: The Empirical data is derived from a limited sample of projects. For this reason, no estimation model is appropriate for all classes of software and in all development environments.

3. COCOMO stands for

- a) Constructive cost model
- b) Comprehensive cost model
- c) Constructive cost estimation model
- d) Complete cost estimation model

View Answer

Answer: a

Explanation: None.

4. Which version of COCOMO states that once requirements have been stabilized, the basic software architecture has been established?

- a) Early design stage model
- b) Post-architecture-stage model
- c) Application composition model
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

5. Which model was used during the early stages of software engineering, when prototyping of user interfaces, consideration of software and system interaction, assessment of performance, and evaluation of technology maturity were paramount.

- a) Early design stage model
- b) Post-architecture-stage model
- c) Application composition model
- d) All of the mentioned

View Answer

Answer: c

Explanation: None.

6. Which one is not a size measure for software product?

- a) LOC
- b) Halstead's program length

- c) Function Count
- d) Cyclomatic Complexity

View Answer

Answer: d

Explanation: It is the part of white box testing.

7. COCOMO was developed initially by

- a) B. Beizer
- b) Rajiv Gupta
- c) B. W. Boehm
- d) Gregg Roethermal

View Answer

Answer: c

Explanation: Barry Boehm introduced a hierarchy of software estimation models bearing the name COCOMO, for CONstructive COst MOdel.

8. Estimation of size for a project is dependent on

- a) Cost
- b) Time
- c) Schedule
- d) None of the mentioned

View Answer

Answer: d

Explanation: Estimation depends on factors such as Function points and LOC.

9. COCOMO-II was developed at

- a) University of Texas
- b) University of Southern California
- c) MIT
- d) IIT-Kanpur

View Answer

Answer: b

Explanation: None.

10. Which one is not a stage of COCOMO-II?

- a) Early design estimation model
- b) Application Composition estimation model
- c) Comprehensive cost estimation model
- d) Post architecture estimation model

View Answer

Answer: a

Explanation: It was a part of COCOMO.

Software Engineering Questions and Answers – Software Risks and Identification

1. What all has to be identified as per risk identification?

- a) Threats
- b) Vulnerabilities
- c) Consequences
- d) All of the mentioned

View Answer

Answer: d

Explanation: Risk identification states what could cause a potential loss.

2. Which one is not a risk management activity?

- a) Risk assessment
- b) Risk generation
- c) Risk control
- d) None of the mentioned

View Answer

Answer: b

Explanation: Risk management activities would never want a new risk to be generated.

3. What is the product of the probability of incurring a loss due to the risk and the potential magnitude of that loss?

- a) Risk exposure
- b) Risk prioritization
- c) Risk analysis
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

4. What threatens the quality and timeliness of the software to be produced?

- a) Known risks
- b) Business risks
- c) Project risks
- d) Technical risks

View Answer

Answer: d

Explanation: Technical risks identify potential design, implementation, interface, verification, and maintenance problems.

5. What threatens the viability of the software to be built?

- a) Known risks
- b) Business risks
- c) Project risks
- d) Technical risks

View Answer

Answer: b

Explanation: Business risks often jeopardize the project or the product.

6. Which of the following is not a business risk?

- a) building an excellent product or system that no one really wants
- b) losing the support of senior management due to a change in focus or change in people

- c) lack of documented requirements or software scope
- d) losing budgetary or personnel commitment

View Answer

Answer: c

Explanation: This is not considered as a business risk.

7. Which of the following is a systematic attempt to specify threats to the project plan?

- a) Risk identification
- b) Performance risk
- c) Support risk
- d) Risk projection

View Answer

Answer: d

Explanation: By identifying known and predictable risks, the project manager takes a first step toward avoiding them when possible and controlling them when necessary.

8. Which risks are associated with the overall size of the software to be built or modified?

- a) Business impact risks
- b) Process definition risks
- c) Product size risks
- d) Development environment risks

View Answer

Answer: c

Explanation: None.

9. Which risks are associated with constraints imposed by management or the marketplace?

- a) Business impact risks
- b) Process definition risks
- c) Product size risks
- d) Development environment risks

View Answer

Answer: a

Explanation: None.

10. Which of the following term is best defined by the statement: "the degree of uncertainty that the product will meet its requirements and be fit for its intended use."?

- a) Performance risk
- b) Cost risk
- c) Support risk
- d) Schedule risk

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Risk Management

1. Risk management is one of the most important jobs for a

- a) Client
- b) Investor
- c) Production team
- d) Project manager

View Answer

Answer: d

Explanation: Risk management involves anticipating risks that might affect the project schedule or the quality of the software being developed, and then taking action to avoid these risks.

2. Which of the following risk is the failure of a purchased component to perform as expected?

- a) Product risk
- b) Project risk
- c) Business risk
- d) Programming risk

View Answer

Answer: a

Explanation: Risks that affect the quality or performance of the software being developed.

3. Which of the following term is best defined by the statement: “There will be a change of organizational management with different priorities.”?

- a) Staff turnover
- b) Technology change
- c) Management change
- d) Product competition

View Answer

Answer: c

Explanation: None.

4. Which of the following term is best defined by the statement: “The underlying technology on which the system is built is superseded by new technology.”?

- a) Technology change
- b) Product competition
- c) Requirements change
- d) None of the mentioned

View Answer

Answer: a

Explanation: Technology changes are common in the competitive environment of software engineering.

5. What assess the risk and your plans for risk mitigation and revise these when you learn more about the risk?

- a) Risk monitoring
- b) Risk planning
- c) Risk analysis
- d) Risk identification

View Answer

Answer: a

Explanation: None.

6. Which of the following risks are derived from the organizational environment where the software is being developed?

- a) People risks
- b) Technology risks
- c) Estimation risks
- d) Organizational risks

View Answer

Answer: d

Explanation: These risks are at management level.

7. Which of the following risks are derived from the software or hardware technologies that are used to develop the system?

- a) Managerial risks
- b) Technology risks
- c) Estimation risks
- d) Organizational risks

View Answer

Answer: b

Explanation: The risks associated with technology might affect the product development.

8. Which of the following term is best defined by the statement: "Derive traceability information to maximize information hiding in the design."?

- a) Underestimated development time
- b) Organizational restructuring
- c) Requirements changes
- d) None of the mentioned

View Answer

Answer: c

Explanation: Tracing the requirements can help us understand the risk.

9. Which of the following strategies means that the impact of the risk will be reduced?

- a) Avoidance strategies
- b) Minimization strategies
- c) Contingency plans
- d) All of the mentioned

View Answer

Answer: b

Explanation: None.

10. Risk management is now recognized as one of the most important project management tasks.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Decomposition Techniques in Software Project Planning

1. Why is decomposition technique required?

- a) Software project estimation is a form of problem solving
- b) Developing a cost and effort estimate for a software project is too complex
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: For these reasons, we decompose the problem, re-characterizing it as a set of smaller problems.

2. Cost and effort estimation of a software uses only one forms of decomposition, either decomposition of the problem or decomposition of the process.

- a) True
- b) False

View Answer

Answer: b

Explanation: Estimation uses one or both forms of partitioning.

3. If a Direct approach to software project sizing is taken, size can be measured in

- a) LOC
- b) FP
- c) LOC and FP
- d) None of the mentioned

View Answer

Answer: a

Explanation: LOC or Line of Code is a direct measure to estimate project size.

4. Which software project sizing approach develop estimates of the information domain characteristics?

- a) Function point sizing
- b) Change sizing
- c) Standard component sizing
- d) Fuzzy logic sizing

View Answer

Answer: a

Explanation: None.

5. The expected value for the estimation variable (size), S, can be computed as a weighted average of the optimistic(Sopt), most likely (Sm), and pessimistic (Spess) estimates given as

- a) $EV = (Sopt + 4Sm + Spess)/4$
- b) $EV = (Sopt + 4Sm + Spess)/6$
- c) $EV = (Sopt + 2Sm + Spess)/6$
- d) $EV = (Sopt + 2Sm + Spess)/4$

View Answer

Answer: b

Explanation: This assumes that there is a very small probability that the actual size result will fall outside the optimistic or pessimistic values.

6. How many forms exists of Barry Boehm's COCOMO Model?

- a) Two
- b) Three

- c) Four
 - d) No form exists
- View Answer

Answer: b

Explanation: The three forms include the basic, intermediate and advanced COCOMO model.

7. Who suggested the four different approaches to the sizing problem?

- a) Putnam
- b) Myers
- c) Boehm
- d) Putnam and Myers

View Answer

Answer: d

Explanation: None.

8. In many cases, it is often more cost-effective to acquire, rather than develop, computer software.

- a) True
- b) False

View Answer

Answer: a

Explanation: Managers are faced with a make-buy decision in such situations.

9. A make-buy decision is based on whether

- a) The software may be purchased off-the-shelf
- b) "Full-experience" or "Partial-experience" software components should be used
- c) Customer-built software should be developed
- d) All of the mentioned

View Answer

Answer: d

Explanation: None..

10. Which of the following is not one of the five information domain characteristics of Function Point (FP) decomposition?

- a) External inputs
- b) External outputs
- c) External process
- d) External inquiries

View Answer

Answer: c

Explanation: External inputs, external outputs, external inquiries, internal logical files, external interface files are the five domains.

11. The project planner must reconcile the estimates based on decomposition techniques to produce a single estimate of effort.

- a) True
- b) False

View Answer

Answer: b

Explanation: The planner must determine the cause of divergence and then reconcile the estimates.

12. Programming language experience is a part of which factor of COCOMO cost drivers?

- a) Personnel Factor
- b) Product Factor

c) Platform Factor

d) Project Factor

View Answer

Answer: a

Explanation: None.

13. If an Indirect approach is taken, then the sizing approach is represented as

a) LOC

b) FP

c) Fuzzy Logic

d) LOC and FP

View Answer

Answer: b

Explanation: A function point (FP) is a unit of measurement to express the amount of business functionality an information system provides to a user.

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Software Engineering Questions and Answers – Managing Software Projects – 1

1. Project management involves the planning, monitoring, and control of the people, process, and events that occur as software evolves from a preliminary concept to an operational implementation.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: None.

2. Which of the following is not an effective software project management focus?

- a) people
- b) product
- c) popularity
- d) process

[View Answer](#)

Answer: c

Explanation: Effective software project management focuses on the four P's: people, product, process, and project.

3. PM-CMM stands for

- a) people management capability maturity model
- b) process management capability maturity model
- c) product management capability maturity model
- d) project management capability maturity model

[View Answer](#)

Answer: a

Explanation: The people management maturity model defines the following key practice areas for software people: recruiting, selection, performance management, training, compensation, career development, organization and work design, and team/culture development.

4. Which of the following is not a project manager's activity?

- a) project control
- b) project management
- c) project planning
- d) project design

[View Answer](#)

Answer: d

Explanation: The design part of any project management is done by the project team.

5. A software _____ provides the framework from which a comprehensive plan for software development can be established.

- a) people
- b) product
- c) process
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: A small number of framework activities are applicable to all software projects, regardless of their size or complexity.

6. Who defines the business issues that often have significant influence on the project?

- a) Practitioners
- b) Project managers

- c) Senior managers
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

7. Who delivers the technical skills that are necessary to engineer a product or an application?

- a) Practitioners
- b) Project managers
- c) Senior managers
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

8. Which of the following paradigm attempts to structure a team in a manner that achieves some of the controls associated with the closed paradigm but also much of the innovation that occurs when using the random paradigm?

- a) asynchronous paradigm
- b) open paradigm
- c) closed paradigm
- d) synchronous paradigm

View Answer

Answer: b

Explanation: Open paradigm team structures are well suited to the solution of complex problems but may not perform as efficiently as other teams.

9. Which of the following is a people-intensive activity?

- a) Problem solving
- b) Organization
- c) Motivation
- d) Project management

View Answer

Answer: d

Explanation: For this reason, competent practitioners often make poor team leaders.

10. Which paradigm structures a team loosely and depends on individual initiative of the team members?

- a) random paradigm
- b) open paradigm
- c) closed paradigm
- d) synchronous paradigm

View Answer

Answer: d

Explanation: None.

11. Which of the following is not an approach to software cost estimation?

- a) Empirical
- b) Heuristic
- c) Analytical
- d) Critical

View Answer

Answer: d

Explanation: Critical is no such standard approach of cost estimation.

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Software Engineering Questions and Answers – Managing Software Projects – 2

1. Which paradigm relies on the natural compartmentalization of a problem and organizes team members to work on pieces of the problem with little active communication among themselves?

- a) random paradigm
- b) open paradigm
- c) closed paradigm
- d) synchronous paradigm

View Answer

Answer: c

Explanation: None.

2. Who interacts with the software once it is released for production use?

- a) End-users
- b) Client
- c) Project (technical) managers
- d) Senior managers

View Answer

Answer: a

Explanation: A product is always built to satisfy an end-user.

3. Which of the following is not an effective project manager trait?

- a) Problem solving
- b) Managerial identity
- c) Influence and team building
- d) None of the mentioned

View Answer

Answer: d

Explanation: All are key traits of an effective project manager.

4. Which type of software engineering team has a defined leader who coordinates specific tasks and secondary leaders that have responsibility for sub tasks?

- a) Controlled decentralized (CD)
- b) Democratic decentralized (DD)
- c) Controlled centralized (CC)
- d) None of the mentioned

View Answer

Answer: a

Explanation: Problem solving remains a group activity, but implementation of solutions is partitioned among subgroups by the team leader.

5. Commitments to unrealistic time and resource estimates may result in

- a) project delay
- b) poor quality work
- c) project failure
- d) all of the mentioned

View Answer

Answer: d

Explanation: None.

6. Which software engineering team has no permanent leader?

- a) Controlled decentralized (CD)
- b) Democratic decentralized (DD)
- c) Controlled Centralized (CC)
- d) None of the mentioned

View Answer

Answer: b

Explanation: Here Communication among team members is horizontal.

7. Which of the following is not a project factor that should be considered when planning the structure of software engineering teams?

- a) The difficulty of the problem to be solved
- b) High frustration caused by personal, business, or technological factors that causes friction among team members
- c) The degree of sociability required for the project
- d) The rigidity of the delivery date

View Answer

Answer: c

Explanation: Development is irrelevant of social quotient.

8. Which of the following is a collection of project coordination technique?

- a) Formal approaches
- b) Formal, interpersonal procedures
- c) Informal, interpersonal procedures
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

9. Which activity sits at the core of software requirements analysis?

- a) Problem decomposition
- b) Partitioning
- c) Problem elaboration
- d) All of the mentioned

View Answer

Answer: d

Explanation: During the scoping activity decomposition is applied in two major areas: the functionality that must be delivered and the process that will be used to deliver it.

10. Which of the following is not a sign that indicates that an information systems project is in jeopardy?

- a) Software people don't understand their customers needs
- b) Changes are managed poorly
- c) Sponsorship is gained
- d) Users are resistant

View Answer

Answer: c

Explanation: Other options are contradictory to the question.

11. SPMP stands for

- a) Software Project Manager's Plan
- b) Software Project Management Plan
- c) Software Product Management Plan
- d) Software Product Manager's Plan

View Answer

Answer: b

Explanation: After planning is complete, documenting of the plans is done in a Software Project Management Plan(SPMP) document.

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Software Engineering Questions and Answers – Project Scheduling and Tracking

1. Which of the following is the reason that software is delivered late?

- a) Changing customer requirements that are not reflected in schedule changes
- b) Technical difficulties that could not have been foreseen in advance
- c) Human difficulties that could not have been foreseen in advance
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

2. Which of the following is an activity that distributes estimated effort across the planned project duration by allocating the effort to specific software engineering tasks?

- a) Software Macroscopic schedule
- b) Software Project scheduling
- c) Software Detailed schedule
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

3. Every task that is scheduled should be assigned to a specific team member is termed as

- a) Compartmentalization
- b) Defined milestones
- c) Defined responsibilities
- d) Defined outcomes

View Answer

Answer: c

Explanation: These responsibilities are domain specific.

4. What is a collection of software engineering work tasks, milestones, and deliverables that must be accomplished to complete a particular project?

- a) Task set
- b) Degree of milestone
- c) Adaptation criteria
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

5. Ensuring that no more than the allocated number of people are allocated at any given time in Software Scheduling is known as

- a) Time Allocation
- b) Effort Validation
- c) Defined Milestone
- d) Effort Distribution

View Answer

Answer: b

Explanation: None.

6. What is used to determine the recommended degree of rigor with which the software process should be applied on a project?

- a) Degree of Rigor
- b) Adaptation criteria
- c) Task Set
- d) Both degree of Rigor and adaptation criteria

View Answer

Answer: b

Explanation: Four different degrees of rigor are: casual, structured, strict, and quick reaction.

7. What evaluates the risk associated with the technology to be implemented as part of project scope?

- a) Concept scoping
- b) Preliminary concept planning
- c) Technology risk assessment
- d) Customer reaction to the concept

View Answer

Answer: b

Explanation: None.

8. Which of the following is not an adaptation criteria for software projects?

- a) Size of the project
- b) Customers Complaints
- c) Project staff
- d) Mission criticality

View Answer

Answer: b

Explanation: These can vary from client to client.

9. Which of the following is a project scheduling method that can be applied to software development?

- a) PERT
- b) CPM
- c) CMM
- d) Both PERT and CPM

View Answer

Answer: d

Explanation: Program evaluation and review technique (PERT) and critical path method (CPM) are two project scheduling methods that can be applied to software development.

10. A technique for performing quantitative analysis of progress is known as

- a) BCWS
- b) EVA
- c) BAC
- d) CBSE

View Answer

Answer: b

Explanation: The earned value system provides a common value scale for every task, regardless of the type of work being performed. The total hours to do the whole project are estimated, and every task is given an earned value based on its estimated percentage of the total.

11. What is the recommended distribution of effort for a project?

- a) 40-20-40
- b) 50-20-30
- c) 30-40-30
- d) 50-30-20

View Answer

Answer: a

Explanation: A recommended distribution of effort across the software process is 40% (analysis and design), 20% (coding), and 40% (testing).

12. A project usually has a timeline chart which was developed by

- a) Henry Gantt
- b) Barry Boehm
- c) Ivar Jacobson
- d) None of the mentioned

View Answer

Answer: a

Explanation: Timeline chart, also called a Gantt chart was invented by Henry Gantt, an industrial engineer in 1917 .

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Software Engineering Questions and Answers – Software Configuration Management – 1

1. Which of the following categories is part of the output of software process?

- a) computer programs
- b) documents that describe the computer programs
- c) data
- d) all of the mentioned

View Answer

Answer: d

Explanation: None

2. Which is a software configuration management concept that helps us to control change without seriously impeding justifiable change?

- a) Baselines
- b) Source code
- c) Data model
- d) None of the mentioned

View Answer

Answer: a

Explanation: A baseline is analogous to the kitchen doors in the restaurant. Before a software configuration item becomes a baseline, change may be made quickly and informally.

3. Software Configuration Management can be administered in several ways. These include

- a) A single software configuration management team for the whole organization
- b) A separate configuration management team for each project
- c) Software Configuration Management distributed among the project members
- d) All of the mentioned

View Answer

Answer: a

Explanation: None

4. What combines procedures and tools to manage different versions of configuration objects that are created during the software process?

- a) Change control
- b) Version control
- c) SCIs
- d) None of the mentioned

View Answer

Answer: b

Explanation: Configuration management allows a user to specify alternative configurations of the software system through the selection of appropriate versions.

5. What complements the formal technical review by assessing a configuration object for characteristics that are generally not considered during review?

- a) Software configuration audit
- b) Software configuration management
- c) Baseline
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

6. Which of the following is the process of assembling program components, data, and libraries, and then compiling and linking these to create an executable system?

- a) System building
- b) Release management
- c) Change management
- d) Version management

View Answer

Answer: a

Explanation: None.

7. Which of the following option is not tracked by configuration management tools?

- a) Tracking of change proposals
- b) Storing versions of system components
- c) Tracking the releases of system versions to customers
- d) None of the mentioned

View Answer

Answer: d

Explanation: All the options are tracked.

8. Which of the following is not a Software Configuration Management Activity?

- a) Configuration item identification
- b) Risk management
- c) Release management
- d) Branch management

View Answer

Answer: b

Explanation: Risk management is an entirely different domain.

9. The definition and use of configuration management standards is essential for quality certification in

- a) ISO 9000
- b) CMM
- c) CMMI
- d) All of the mentioned

View Answer

Answer: d

Explanation: It is defined in all the mentioned options.

10. What involves preparing software for external release and keeping track of the system versions that have been released for customer use?

- a) System building
- b) Release management
- c) Change management
- d) Version management

View Answer

Answer: b

Explanation: None.

Software Engineering Questions and Answers – Software Configuration Management – 2

1. Which of the following process ensures that versions of systems and components are recorded and maintained?

- a) Codeline
- b) Configuration control
- c) Version
- d) Workspace

View Answer

Answer: b

Explanation: In configuration control changes are managed and all versions of components are identified and stored for the lifetime.

2. Which of the following process is concerned with analyzing the costs and benefits of proposed changes?

- a) Change management
- b) Version management
- c) System building
- d) Release management

View Answer

Answer: a

Explanation: It involves approving those changes that are worthwhile, and tracking which components in the system have been changed.

3. Which of the following is not a Version management feature?

- a) Version and release identification
- b) Build script generation
- c) Project support
- d) Change history recording

View Answer

Answer: b

Explanation: All other options are a part of version management.

4. Which method recommends that very frequent system builds should be carried out with automated testing to discover software problems?

- a) Agile method
- b) Parallel compilation method
- c) Large systems method
- d) All of the mentioned

View Answer

Answer: a

Explanation: In keeping with the agile methods notion of making many small changes, continuous integration involves rebuilding the mainline frequently, after small source code changes have been made.

5. Which of the following is not a build system feature?

- a) Minimal recompilation
- b) Documentation generation
- c) Storage management
- d) Reporting

View Answer

Answer: c

Explanation: To reduce the storage space required by multiple versions of components that differ only slightly, version management systems usually provide storage management facilities.

6. Which of the following is a collection of component versions that make up a system?

- a) Version
- b) Codeline
- c) Baseline
- d) None of the mentioned

View Answer

Answer: c

Explanation: Baselines are controlled, which means that the versions of the components making up the system cannot be changed.

7. Which of the following is a configuration item?

- a) Design & Test specification
- b) Source code
- c) Log information
- d) All of the mentioned

View Answer

Answer: d

Explanation: A configuration item is an approved and accepted deliverable, changes have to be made through formal procedure.

8. Which of the following is a part of system release?

- a) electronic and paper documentation describing the system
- b) packaging and associated publicity that have been designed for that release
- c) an installation program that is used to help install the system on target hardware
- d) all of the mentioned

View Answer

Answer: d

Explanation: Release creation is the process of creating the collection of files and documentation that includes all of the components of the system release.

9. A sequence of baselines representing different versions of a system is known as

- a) System building
- b) Mainline
- c) Software Configuration Item(SCI)
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

10. Which of the following term is best defined by the statement "The creation of a new codeline from a version in an existing codeline"?

- a) Branching
- b) Merging
- c) Codeline
- d) Mainline

View Answer

Answer: a

Explanation: The code may then be developed independently.

Software Engineering Questions and Answers – Software Maintenance – 1

1. Software Maintenance includes
- a) Error corrections
 - b) Enhancements of capabilities
 - c) Deletion of obsolete capabilities
 - d) All of the mentioned

View Answer

Answer: d

Explanation: None.

2. Maintenance is classified into how many categories ?

- a) two
- b) three
- c) four
- d) five

View Answer

Answer: c

Explanation: Adaptive, corrective, perfective and preventive are the four types of software maintenance.

3. The modification of the software to match changes in the ever changing environment, falls under which category of software maintenance?

- a) Corrective
- b) Adaptive
- c) Perfective
- d) Preventive

View Answer

Answer: b

Explanation: None.

4. How many phases are there in Tauter Maintenance Model?

- a) six
- b) seven
- c) eight
- d) nine

View Answer

Answer: c

Explanation: None.

5. What type of software testing is generally used in Software Maintenance?

- a) Regression Testing
- b) System Testing
- c) Integration Testing
- d) Unit Testing

View Answer

Answer: a

Explanation: All other options are known as levels of software testing which further have types of software testing.

6. Regression testing is a very expensive activity.

- a) True
- b) False

View Answer

Answer: a

Explanation: As regression testing is performed many times over the life of the software product, it becomes a costly affair.

7. Selective retest techniques may be more economical than the “retest-all” technique. How many selective retest techniques are there?

- a) two
- b) three
- c) four
- d) five

View Answer

Answer: b

Explanation: The three categories include: Coverage, Minimization and Safe techniques.

8. Which selective retest technique selects every test case that causes a modified program to produce a different output than its original version?

- a) Coverage
- b) Minimization
- c) Safe
- d) Maximization

View Answer

Answer: c

Explanation: Safe techniques do not focus on coverage criteria, instead they select every test case that cause a modified program to produce different output than its original version.

9. _____ measures the ability of a regression test selection technique to handle realistic applications.

- a) Efficiency
- b) Precision
- c) Generality
- d) Inclusiveness

View Answer

Answer: c

Explanation: Generality measures the ability of a technique to handle realistic and diverse language constructs, arbitrarily complex modifications, and realistic testing applications.

10. Which regression test selection technique exposes faults caused by modifications?

- a) Efficiency
- b) Precision
- c) Generality
- d) Inclusiveness

View Answer

Answer: d

Explanation: Inclusiveness measures the extent to which a technique chooses test cases that will cause the modified program to produce different output than the original program, and thereby expose faults caused by modifications.

Software Engineering Questions and Answers – Software Maintenance – 2

1. The process of generating analysis and design documents is known as

- a) Software engineering
- b) Software re-engineering
- c) Reverse engineering
- d) Re-engineering

View Answer

Answer: c

Explanation: Reverse engineering is the process followed in order to find difficult, unknown and hidden information about a software system.

2. What is a software patch?

- a) Required or Critical Fix
- b) Emergency Fix
- c) Daily or routine Fix
- d) None of the mentioned

View Answer

Answer: b

Explanation: A software patch is an emergency fix which is worked upon the obsolete version whenever a vulnerability is encountered.

3. Which one of the following is not a maintenance model?

- a) Waterfall model
- b) Reuse-oriented model
- c) Iterative enhancement model
- d) Quick fix model

View Answer

Answer: a

Explanation: Waterfall model is a software development model.

4. What does ACT stands for in In Boehm model for software maintenance?

- a) Actual change track
- b) Annual change track
- c) Annual change traffic
- d) Actual change traffic

View Answer

Answer: c

Explanation: None.

5. Choose the suitable options with respect to regression testing.

- a) It helps in development of software
- b) It helps in maintenance of software
- c) It helps in development & maintenance of software
- d) none of the mentioned

View Answer

Answer: c

Explanation: Regression testing preserves the quality and reliability of software and ensures the software's continued operation.

6. What are legacy systems?

- a) new systems
- b) old systems

- c) under-developed systems
- d) none of the mentioned

View Answer

Answer: b

Explanation: Legacy systems are the existing systems which may require some modification or maintenance.

7. Which of the following manuals is not a user documentation?

- a) Beginner's Guide
- b) Installation guide
- c) Reference Guide
- d) SRS

View Answer

Answer: d

Explanation: SRS provides information on exact requirements of system as agreed between user and developers.

8. Which of the following manuals is a user documentation?

- a) SRS -Software Requirement Specification
- b) SDD -Software Design Document
- c) System Overview
- d) None of the mentioned

View Answer

Answer: c

Explanation: System overview provides general description of the system's functions.

9. The process of transforming a model into source code is known as

- a) Forward engineering
- b) Reverse engineering
- c) Re-engineering
- d) Reconstructing

View Answer

Answer: a

Explanation: None.

10. How many stages are there in Iterative-enhancement model used during software maintenance?

- a) two
- b) three
- c) four
- d) five

View Answer

Answer: b

Explanation: The stages include: analysis of existing system, characterize proposed modifications, redesign and implement current version.

Software Engineering Questions and Answers – Software Certification

1. Which of the following is a field related to certification ?

- a) Person
- b) Process
- c) Product
- d) All of the mentioned

View Answer

Answer: d

Explanation: During software certification all given options are targeted.

2. Which of the following is a software process certification ?

- a) JAVA Certified
- b) IBM Certified
- c) ISO-9000
- d) Microsoft Certified

View Answer

Answer: c

Explanation: None.

3. Which standard is followed in aviation industry ?

- a) CTRADO-172B
- b) RTCADO-178B
- c) RTRADO-178B
- d) CTCADO-178B

View Answer

Answer: b

Explanation: RTCADO-178B is a popular aviation standard that has become a defacto standard.

4. How many levels, does the DO-178B certification targeted by RTCADO-178B has ?

- a) two
- b) three
- c) four
- d) five

View Answer

Answer: d

Explanation: The levels are A, B, C, D, E.

5. Third Party Certification for software standards is based on

- a) UI 1998, Second Edition
- b) UT 1998, Second Edition
- c) UI 1992, Second Edition
- d) UI 1996, Second Edition

View Answer

Answer: a

Explanation: None.

6. What are the goals to gain Laboratory Accreditation ?

- a) Increase availability of testing services through third-party laboratories
- b) Increase availability of testing market to encourage development of software testing industry

- c) Reduce cost by increasing supply of testing services
- d) All of the mentioned

View Answer

Answer: d

Explanation: The goal is to promote development of competitive market, hence option d.

7. National Voluntary Laboratory Accreditation Program approve accreditation in

- a) Environmental standards
- b) Computers and electronics
- c) Product testing
- d) All of the mentioned

View Answer

Answer: d

Explanation: National Voluntary Laboratory Accreditation Program Works with other national metrology institutes to establish criteria for mutual recognition of test results.

8. CSTE stands for

- a) Certified Software Technology
- b) Certified Software Tester
- c) Certified Software Trainee
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

9. CSQA stands for

- a) Certified Software Quality Analyst
- b) Certified Software Quality Approved
- c) Certified Software Quality Acclaimed
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

10. Which of the following companies provide certifications for their own products?

- a) CISCO
- b) ORACLE
- c) Microsoft
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

Software Engineering Questions and Answers – Process Improvement

1. “Robustness” answers which of the following description?

- a) CASE tools be used to support the process activities
- b) Process errors are avoided or trapped before they result in product errors
- c) Defined process is acceptable and usable by the engineers responsible for producing the software
- d) Process continues in spite of unexpected problems

View Answer

Answer: d

Explanation: None.

2. Process improvement is the set of activities, methods, and transformations that developers use to develop and maintain information systems.

- a) True
- b) False

View Answer

Answer: b

Explanation: The definition is of a system development process.

3. “Understandability” answers which of the following description?

- a) The extent to which the process is explicitly defined
- b) Process errors are avoided or trapped before they result in product errors
- c) Defined process is acceptable and usable by the engineers responsible for producing the software product
- d) Process continues in spite of unexpected problems

View Answer

Answer: a

Explanation: None.

4. How many stages are there in process improvement?

- a) three
- b) four
- c) five
- d) six

View Answer

Answer: a

Explanation: Process measurement, analysis and change are the three stages.

5. In which stage of process improvement bottlenecks and weaknesses are identified?

- a) Process measurement
- b) Process analysis
- c) Process change
- d) None of the mentioned

View Answer

Answer: b

Explanation: In Process analysis the current process is assessed and bottlenecks and weaknesses are identified.

6. Prototypes and 4GL business systems are categorized under which process?

- a) Informal
- b) Managed
- c) Methodical
- d) Supported

View Answer

Answer: a

Explanation: Here the development team chose their own way of working.

7. The documentation of a process which records the tasks, the roles and the entities used is called

- a) Process metric
- b) Process analysis
- c) Process modelling
- d) None of the mentioned

View Answer

Answer: c

Explanation: Process models may be presented from different perspectives.

8. It is always best to start process analysis with a new test model.

- a) True
- b) False

View Answer

Answer: b

Explanation: It is always best to start process analysis with an existing model. People then may extend and change this.

9. What is a tangible output of an activity that is predicted in a project plan?

- a) Deliverable
- b) Activity
- c) Condition
- d) Process

View Answer

Answer: a

Explanation: None.

10. What is often undefined and is left to the ingenuity of the project managers and engineers?

- a) Role
- b) Exception
- c) Activity
- d) Process

View Answer

Answer: b

Explanation: Exceptions are often undefined and it is left to the ingenuity of the project managers and engineers to handle the exception.

11. Which of the following is not a part of process change?

- a) Introducing new practices, methods or processes
- b) Introducing new team members to existing project
- c) Introducing or removing deliverable
- d) Introducing new roles or responsibilities

View Answer

Answer: b

Explanation: Adding more developers aid to process completion rather than changing it.

12. The Capability Maturity Model (CMM) is a continuous model.

- a) True
- b) False

View Answer

Answer: b

Explanation: The CMM is discrete rather than continuous.

13. The CMMI assessment is based on a x-point scale. What is the value of x?

- a) 0
- b) 2
- c) 4
- d) 6

View Answer

Answer: d

Explanation: Not performed, performed, managed, defined, quantitatively managed, and optimizing are the six points.

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Software Engineering Questions and Answers – Software Quality Assurance

1. Which of the following is not included in failure costs?

- a) rework
- b) repair
- c) failure mode analysis
- d) none of the mentioned

View Answer

Answer: d

Explanation: Failure costs are those that would disappear if no defects appeared before shipping a product to customers.

2. Which requirements are the foundation from which quality is measured?

- a) Hardware
- b) Software
- c) Programmers
- d) None of the mentioned

View Answer

Answer: b

Explanation: Lack of conformance to requirements is lack of quality.

3. Which of the following is not a SQA plan for a project?

- a) evaluations to be performed
- b) amount of technical work
- c) audits and reviews to be performed
- d) documents to be produced by the SQA group

View Answer

Answer: b

Explanation: All other options support a SQA plan.

4. Degree to which design specifications are followed in manufacturing the product is called

- a) Quality Control
- b) Quality of conformance
- c) Quality Assurance
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

5. Which of the following is not included in External failure costs?

- a) testing
- b) help line support
- c) warranty work
- d) complaint resolution

View Answer

Answer: a

Explanation: External failure costs are associated with defects found after the product has been shipped to the customer.

6. Which of the following is not an appraisal cost in SQA?

- a) inter-process inspection
- b) maintenance

- c) quality planning
- d) testing

View Answer

Answer: c

Explanation: It is associated prevention cost.

7. Who identifies, documents, and verifies that corrections have been made to the software?

- a) Project manager
- b) Project team
- c) SQA group
- d) All of the mentioned

View Answer

Answer: c

Explanation: None.

8. The primary objective of formal technical reviews is to find _____ during the process so that they do not become defects after release of the software.

- a) errors
- b) equivalent faults
- c) failure cause
- d) none of the mentioned

View Answer

Answer: a

Explanation: Errors lead to faults

9. What is not included in prevention costs?

- a) quality planning
- b) formal technical reviews
- c) test equipment
- d) equipment calibration and maintenance

View Answer

Answer: d

Explanation: The cost of quality includes all costs incurred in the pursuit of quality or in performing quality-related activities.

10. Software quality assurance consists of the auditing and reporting functions of management.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – ISO 9001 and CMM

1. CMM stands for

- a) Capability Management Module
- b) Conservative Maturity Model
- c) Capability Maturity Module
- d) Capability Maturity Model

View Answer

Answer: d

Explanation: The Capability Maturity Model for Software describes the principles and practices underlying software process maturity and is intended to help software organizations improve the maturity of their software processes in terms of an evolutionary path from ad hoc, chaotic processes to mature, disciplined software processes.

2. The ISO 9000 series of standards is a program that can be used for external quality assurance purposes.

- a) True
- b) False

View Answer

Answer: b

Explanation: The ISO 9000 series of standards is a set of documents.

3. According to ISO 9001, the causes of nonconforming product should be

- a) deleted
- b) eliminated
- c) identified
- d) eliminated and identified

View Answer

Answer: d

Explanation: ISO 9001 requires that the causes of nonconforming product to be identified. Potential causes of nonconforming product are eliminated.

4. .CO policy in CMM means

- a) The leadership practices in Commitment to Perform
- b) The organizational structure (groups) practices in Ability to Perform
- c) The policy practices in Commitment to Perform
- d) The planning practices in Commitment to Perform

View Answer

Answer: c

Explanation: CMM have certain policy practices covered under .CO policy.

5. ISO 9001 is not concerned with _____ of quality records.

- a) collection
- b) maintenance
- c) verification
- d) dis-positioning

View Answer

Answer: c

Explanation: The practices defining the quality records to be maintained in the CMM are distributed throughout the key process areas in the various Activities Performed practices.

6. Which of the following is not a maturity level in CMM?

- a) Design
 - b) Repeatable
 - c) Managed
 - d) Optimizing
- View Answer

Answer: c

Explanation: The CMM is organized into five maturity levels as namely: Initial, Repeatable, Defined, Managed and Optimizing.

7. In CMM, the life cycle activities of requirements analysis, design, code, and test are described in

- a) Software Product Engineering
 - b) Software Quality Assurance
 - c) Software Subcontract Management
 - d) Software Quality Management
- View Answer

Answer: a

Explanation: In CMM planning these activities is described in Software Project Planning, however the life cycle activities of requirements analysis, design, code, and test are described in Software Product Engineering.

8. Which of the following requires design control measures, such as holding and recording design reviews and qualification tests?

- a) CMM
 - b) ISO 9001
 - c) ISO 9000-3
 - d) None of the mentioned
- View Answer

Answer: c

Explanation: ISO 9000-3 states that the supplier should carry out reviews to ensure the requirements are met and design methods are correctly carried out.

9. The CMM emphasizes

- a) continuous process improvement
 - b) the need to record information
 - c) the need to accept quality system
 - d) none of the mentioned
- View Answer

Answer: b

Explanation: CMM emphasizes the need to record information for later use in the process and for improvement of the process.

10. _____ states that, where appropriate, adequate statistical techniques are identified and used to verify the acceptability of process capability and product characteristics.

- a) ISO 9001
 - b) ISO 9000-4
 - c) CMM
 - d) All of the mentioned
- View Answer

Answer: a

Explanation: ISO 9001 states that, where, appropriate adequate statistical techniques are identified and used to verify the acceptability of process capability and product characteristics.

Software Engineering Questions and Answers – Architectural Design

1. Architectural design is a creative process satisfying only functional-requirements of a system.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: In architectural design you design a system organization satisfying the functional and non-functional requirements of a system.

2. A _____ view shows the system hardware and how software components are distributed across the processors in the system.

- a) physical
- b) logical
- c) process
- d) all of the mentioned

[View Answer](#)

Answer: a

Explanation: A physical view is implemented by system engineers implementing the system hardware.

3. The UML was designed for describing _____

- a) object-oriented systems
- b) architectural design
- c) SRS
- d) Both object-oriented systems and Architectural design

[View Answer](#)

Answer: d

Explanation: The UML was designed for describing object-oriented systems and, at the architectural design stage, you often want to describe systems at a higher level of abstraction.

4. Which of the following view shows that the system is composed of interacting processes at run time?

- a) physical
- b) development
- c) logical
- d) process

[View Answer](#)

Answer: d

Explanation: This view is useful for making judgments about non-functional system characteristics such as performance and availability.

5. Which of the following is an architectural conflict?

- a) Using large-grain components improves performance but reduces maintainability
- b) Introducing redundant data improves availability but makes security more difficult
- c) Localizing safety-related features usually means more communication so degraded performance
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: High availability architecture can be affected by several design factors that are required to be maintained to ensure that no single points of failure exist in such design.

6. Which of the following is not included in Architectural design decisions?

- a) type of application
- b) distribution of the system

- c) architectural styles
- d) testing the system

View Answer

Answer: d

Explanation: Architectural design decisions include decisions on the type of application, the distribution of the system, the architectural styles to be used, and the ways in which the architecture should be documented and evaluated.

7. Architecture once established can be applied to other products as well.

- a) True
- b) False

View Answer

Answer: b

Explanation: Systems in the same domain often have similar architectures that reflect domain concepts.

8. Which of the following pattern is the basis of interaction management in many web-based systems?

- a) architecture
- b) repository pattern
- c) model-view-controller
- d) different operating system

View Answer

Answer: c

Explanation: Model-View-Controller pattern is the basis of interaction management in many web-based systems.

9. What describes how a set of interacting components can share data?

- a) model-view-controller
- b) architecture pattern
- c) repository pattern
- d) none of the mentioned

View Answer

Answer: c

Explanation: The majority of systems that use large amounts of data are organized around a shared database or repository.

10. Which view in architectural design shows the key abstractions in the system as objects or object classes?

- a) physical
- b) development
- c) logical
- d) process

View Answer

Answer: c

Explanation: It is possible to relate the system requirements to entities in a logical view.

11. Which of the following is a type of Architectural Model?

- a) Static structural model
- b) Dynamic process model
- c) Distribution model
- d) All of the mentioned

View Answer

Answer: d

Explanation: All these models reflects the basic strategy that is used to structure a system.

Software Engineering Questions and Answers – Architectural Patterns

1. Which of these following sensor is a useful as part of a burglar alarm system for commercial buildings?

- a) Movement detector
- b) Door sensor
- c) Window sensor
- d) All of the mentioned

View Answer

Answer: d

Explanation: A burglar alarm system for commercial buildings include movement detectors in individual rooms, door sensors that detect corridor doors opening, and window sensors on ground-floor windows that can detect when a window has been opened.

2. Which of the following is not real-time architectural patterns that are commonly used?

- a) Asynchronous communication
- b) Observe and React
- c) Environmental Control
- d) Process Pipeline

View Answer

Answer: a

Explanation: These patterns can be combined and you will often see more than one of them in a single system.

3. A monitoring system examines its environment through

- a) operating system
- b) communication
- c) set of sensors
- d) none of the mentioned

View Answer

Answer: c

Explanation: If some exceptional event or sensor state is detected by the system, the monitoring system takes some action. Often, this involves raising an alarm to draw an operator's attention to the event.

4. Which of the following is applicable on software radio?

- a) Environmental Control
- b) Process Pipeline
- c) Distributed system
- d) None of the mentioned

View Answer

Answer: b

Explanation: A software radio accepts incoming packets of digital data representing the radio transmission and transforms these into a sound signal that people can listen to.

5. An example of a system that may use a process pipeline is a high-speed

- a) data distributing system
- b) data acquisition system
- c) data collector system
- d) none of the mentioned

View Answer

Answer: b

Explanation: Data acquisition systems collect data from sensors for subsequent processing and analysis.

6. Monitoring systems are an important class of embedded real-time systems.

- a) True
- b) False

View Answer

Answer: a

Explanation: A monitoring system examines its environment through a set of sensors and, usually, displays the state of the environment in some way.

7. Which of the following is an example of a controller for a car braking system?

- a) Observe and React
- b) Process Pipeline
- c) Environmental Control
- d) None of the mentioned

View Answer

Answer: d

Explanation: An anti-skid braking system in a car monitors the car's wheels and brake system .

8. ETL stands for

- a) Data Extraction Transformation & Loading
- b) Data Execution Transformation & Loading
- c) Extraction Transformation & Loading
- d) Execution Transformation & Loading

View Answer

Answer: a

Explanation: None.

9. Control systems may make use of the Environmental Control pattern, which is a general control pattern that includes _____ processes.

- a) sensor
- b) actuator
- c) pipeline
- d) both sensor and actuator

View Answer

Answer: d

Explanation: Such patterns are quite common in Environmental Control Systems.

10. _____ can be associated with a separate processor or core, so that the processing steps can be carried out in parallel.

- a) Process Pipeline
- b) Environmental Control
- c) Observe and React
- d) None of the mentioned

View Answer

Answer: a

Explanation: The Process Pipeline pattern makes this rapid processing possible by breaking down the required data processing into a sequence of separate transformations, with each transformation carried out by an independent process.

Software Engineering Questions and Answers – Application Architectures

1. Which of the following examples is/are models of application architectures?

- a) a means of assessing components for reuse
- b) a design checklist
- c) a vocabulary for talking about types of applications
- d) all of the mentioned

View Answer

Answer: d

Explanation: Application architectures encapsulate the principal characteristics of a class of systems.

2. ERP stands for

- a) Enterprise Research Planning
- b) Enterprise Resource Planning
- c) Enterprise Resource Package
- d) Enterprise Research Package

View Answer

Answer: b

Explanation: None.

3. Which of the following type describes application architectures?

- a) Transaction processing applications
- b) Language processing systems
- c) Client management systems
- d) Transaction processing applications and Language processing systems

View Answer

Answer: d

Explanation: Transaction processing applications are database-centered applications that process user requests for information and update the information in a database, while language processing systems are systems in which the user's intentions are expressed in a formal language.

4. All the operations in a transaction need to be completed before the database changes are made _____

- a) functional
- b) available to the users
- c) permanent
- d) none of the mentioned

View Answer

Answer: b

Explanation: This ensures that failure of operations within the transaction does not lead to inconsistencies in the database.

5. Systems that involve interaction with a shared database can be considered as.

- a) software-based
- b) transaction-based
- c) server-based
- d) client-based

View Answer

Answer: b

Explanation: Such systems with a shared database are also referred to as transaction based information systems.

6. What translates a natural or an artificial language into another representation of that language and, for programming languages also execute the resulting code?

- a) ERP systems
- b) Transaction-based information systems
- c) Language processing systems
- d) None of the mentioned

View Answer

Answer: c

Explanation: In software engineering, compilers translate an artificial programming language into machine code.

7. Properties of a system such as performance and security are independent of the architecture used.

- a) True
- b) False

View Answer

Answer: b

Explanation: Properties such as performance, security, and availability are influenced by the architecture used.

8. Which of the following is/are commonly used architectural pattern(s)?

- a) Model-View-Controller
- b) Layered Architecture
- c) Client-server
- d) All of the mentioned

View Answer

Answer: d

Explanation: Commonly used architectural patterns include Model-View-Controller, Layered Architecture, Repository, Client-server, and Pipe and Filter.

9. A language-processing systems may translate an XML data description into

- a) a machine code
- b) an alternative XML representation
- c) machine code and alternative XML representation
- d) a software module

View Answer

Answer: c

Explanation: Such is the property and function of language processing system.

10. Transaction processing systems may be organized as a _____ architecture with system components responsible for input, processing, and output.

- a) Repository
- b) Client-server
- c) Model-View-Controller
- d) Pipe and Filter

View Answer

Answer: d

Explanation: None.

Software Engineering Questions and Answers – Unified Modelling Language

1. Object oriented analysis and design can be handled by the one who knows UML.

- a) True
- b) False

View Answer

Answer: b

Explanation: The Unified Modeling Language includes a set of graphic notation techniques to create visual models of object-oriented software-intensive systems.

2. At Conceptual level Class diagrams should include

- a) operations only
- b) attributes only
- c) both operations and attributes
- d) none of the mentioned

View Answer

Answer: b

Explanation: In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.

3. Select the statement true for activity diagrams.

- a) They can be used to discover parallel activities
- b) They are used to depict workflow for a particular business activity
- c) Activity diagram do not tell who does what and are difficult to trace back to object models
- d) All of the mentioned

View Answer

Answer: d

Explanation: Activity diagrams are graphical representations of workflows of step wise activities and actions with support for choice, iteration and concurrency.

4. Constraints can be represented in UML by

- a) {text}
- b) [text].
- c) Constraint
- d) None of the mentioned

View Answer

Answer: a

Explanation: Constraints are represented by {text string}.

5. What is an object?

- a) An object is an instance of a class
- b) An object includes encapsulation of data
- c) An object is not an instance of a class
- d) All of the mentioned

View Answer

Answer: a

Explanation: An object is an instance of a class.

6. What is an abstract class?

- a) A class that has direct instances, but whose descendants may have direct instances

- b) A class that has direct instances, but whose descendants may not have direct instances
- c) A class that has no direct instances, but whose descendants may have direct instances
- d) All of the mentioned

View Answer

Answer: c

Explanation: An abstract type is a type in a nominative type system which cannot be instantiated directly.

7. Which of the following are the valid relationships in Use Case Diagrams

- a) Generalization
- b) Include
- c) Extend
- d) All of the mentioned

View Answer

Answer: d

Explanation: Generalization, include, extend all of these are valid relationships in use case diagrams.

8. Which of the following statement(s) is true about interaction diagrams?

- a) Interaction diagrams are at their best when they deal with one main design flow and not multiple variants that can happen
- b) Interaction diagrams are good at designing part or all of one use case's functionality across multiple objects
- c) Interaction diagrams allow the analyst to show iteration and conditional execution for messaging between objects
- d) All of the mentioned

View Answer

Answer: d

Explanation: Interaction diagram is used to describe some type of interactions among the different elements in the model. So this interaction is a part of dynamic behaviour of the system.

9. UML interfaces are used to:

- a) specify required services for types of objects
- b) program in Java, but not in C++ or Smalltalk
- c) define executable logic to reuse across classes
- d) define an API for all classes

View Answer

Answer: a

Explanation: An interface is like a template design for a class that contains no data or implementation; only definitions for methods, properties etc.

10. Referring to the attached diagram, the arrow indicates:

- a) Navigability
- b) Dependency
- c) Association
- d) Refers to

View Answer

Answer: a

Explanation: The arrows describe the ways you can navigate.

Software Engineering Questions and Answers – Diagrams in UML – 1

1. Which of the following UML diagrams has a static view?

- a) Collaboration
- b) Use case
- c) State chart
- d) Activity

View Answer

Answer: b

Explanation: A use case diagrams captures only the functionality of the system whereas a dynamic model/view captures the functions as well as the action.

2. What type of core-relationship is represented by the symbol in the figure below?



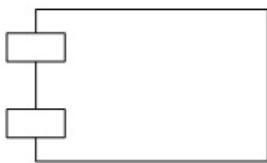
- a) Aggregation
- b) Dependency
- c) Generalization
- d) Association

View Answer

Answer: a

Explanation: None.

3. Which core element of UML is being shown in the figure?



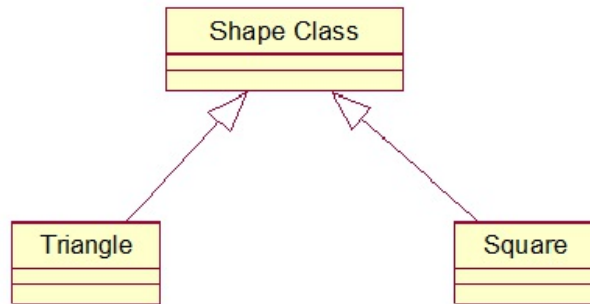
- a) Node
- b) Interface
- c) Class
- d) Component

View Answer

Answer: d

Explanation: The figure is self explanatory. A component is a modular, significant and replaceable part of the system that packages implementation and exposes a set of interfaces.

4. What type of relationship is represented by Shape class and Square ?



- a) Realization
 - b) Generalization
 - c) Aggregation
 - d) Dependency
- View Answer

Answer: b

Explanation: The generalization relationship is also known as the inheritance relationship. In the figure Square is the subclass of superclass shape.

5. Which diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time?

- a) Sequence Diagram
 - b) Collaboration Diagram
 - c) Class Diagram
 - d) Object Diagram
- View Answer

Answer: d

Explanation: An object diagram focuses on some particular set of object instances and attributes, and the links between the instances. It is a static snapshot of a dynamic view of the system.

6. Interaction Diagram is a combined term for

- a) Sequence Diagram + Collaboration Diagram
 - b) Activity Diagram + State Chart Diagram
 - c) Deployment Diagram + Collaboration Diagram
 - d) None of the mentioned
- View Answer

Answer: a

Explanation: Interaction diagram are used to formalize the dynamic behavior of the system.

7. Structure diagrams emphasize the things that must be present in the system being modeled.

- a) True
 - b) False
- View Answer

Answer: a

Explanation: Since structure diagrams represent the structure they are used extensively in documenting the architecture of software systems

8. Which of the following diagram is time oriented?

- a) Collaboration
 - b) Sequence
 - c) Activity
 - d) None of the mentioned
- View Answer

Answer: b

Explanation: A sequence diagrams timeline along which tasks are completed.

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Software Engineering Questions and Answers – Diagrams in UML – 2

1. How many diagrams are here in Unified Modelling Language?

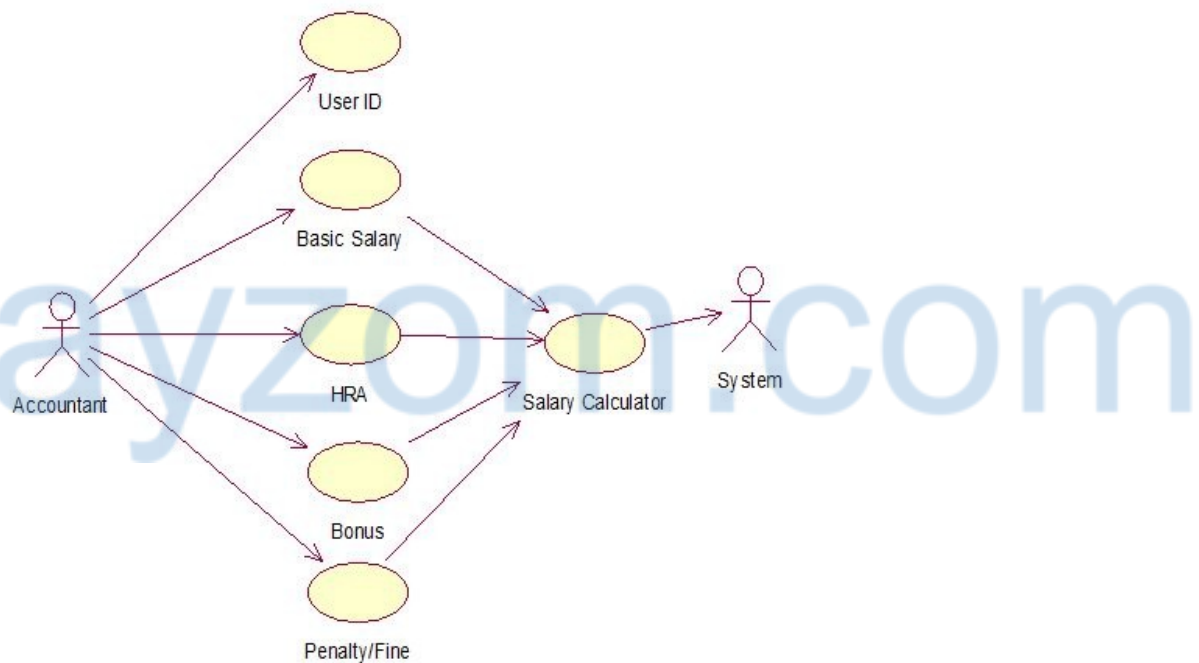
- a) six
- b) seven
- c) eight
- d) nine

View Answer

Answer: d

Explanation: The nine UML diagrams include use-case, sequence, collaboration, activity, state-chart, deployment, class, object and component.

2. Which UML diagram is shown below?



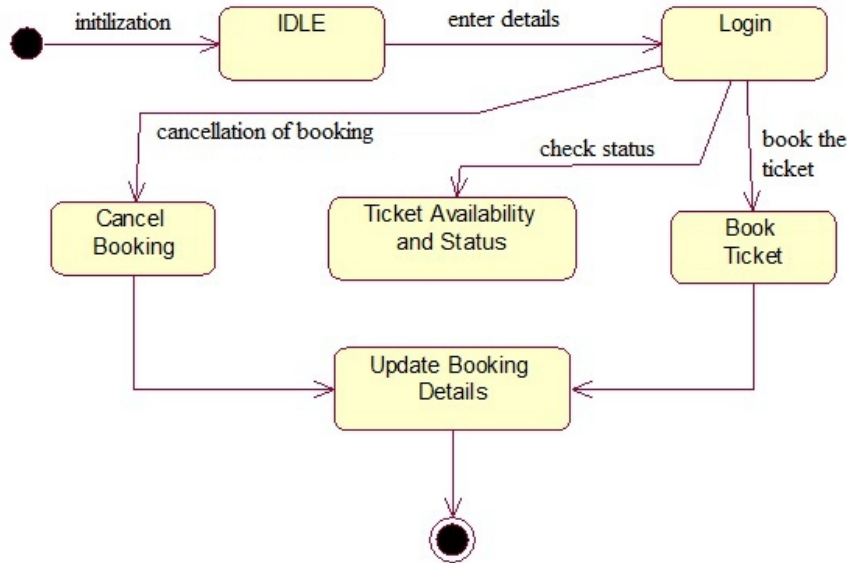
- a) Use Case
- b) Collaboration Diagram
- c) Class Diagram
- d) Object Diagram

View Answer

Answer: a

Explanation: None.

3. Which UML diagram is shown below?

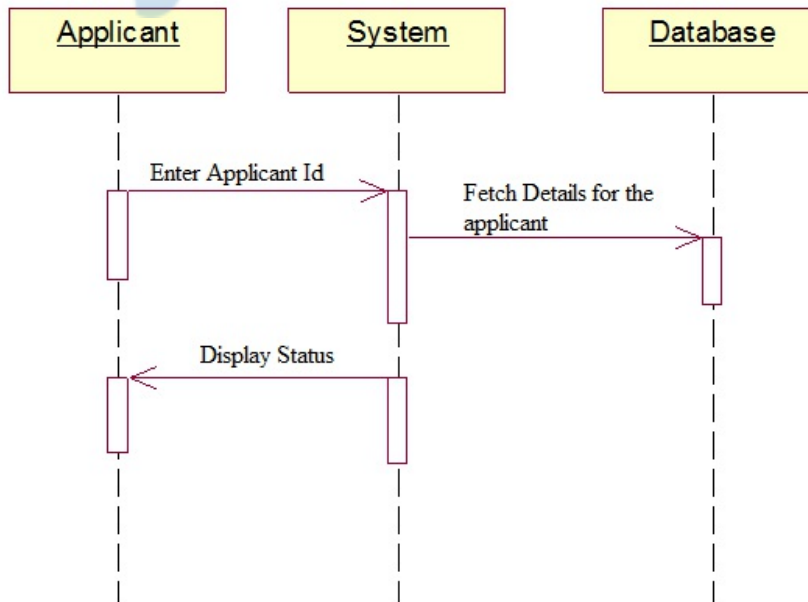


- a) Use Case
 - b) State Chart
 - c) Activity
 - d) Object Diagram
- View Answer

Answer: b

Explanation: None.

4. Which UML diagram is shown below?

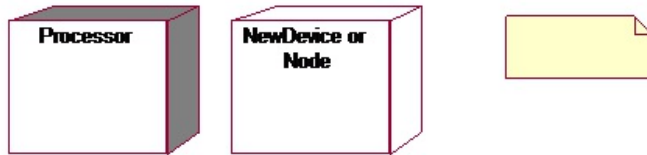


- a) Use Case
 - b) Collaboration Diagram
 - c) Sequence Diagram
 - d) Object Diagram
- View Answer

Answer: c

Explanation: None.

5. Which UML diagram's symbols are shown below?



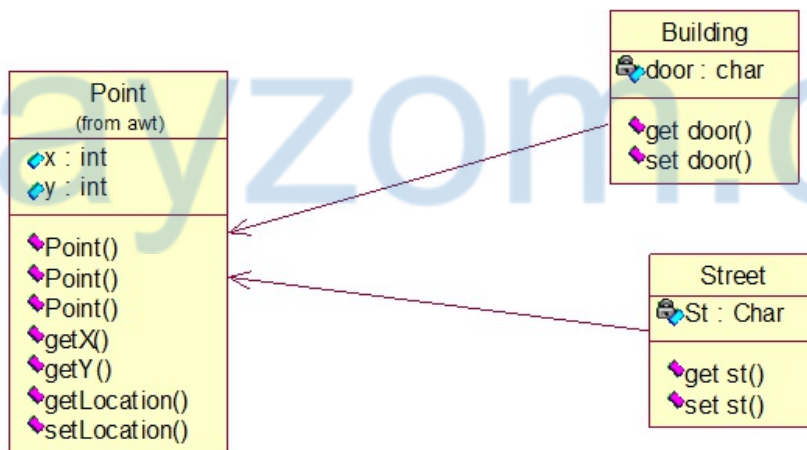
- a) Deployment diagram
- b) Collaboration Diagram
- c) Component Diagram
- d) Object Diagram

View Answer

Answer: a

Explanation: None.

6. Which UML diagram is shown below?



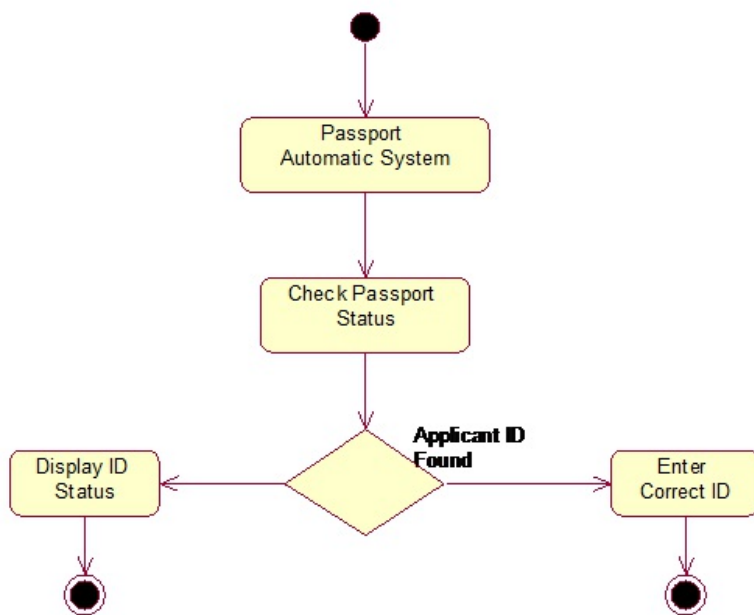
- a) Deployment diagram
- b) Collaboration Diagram
- c) Object Diagram
- d) Class Diagram

View Answer

Answer: d

Explanation: None.

7. Which UML diagram is shown below?

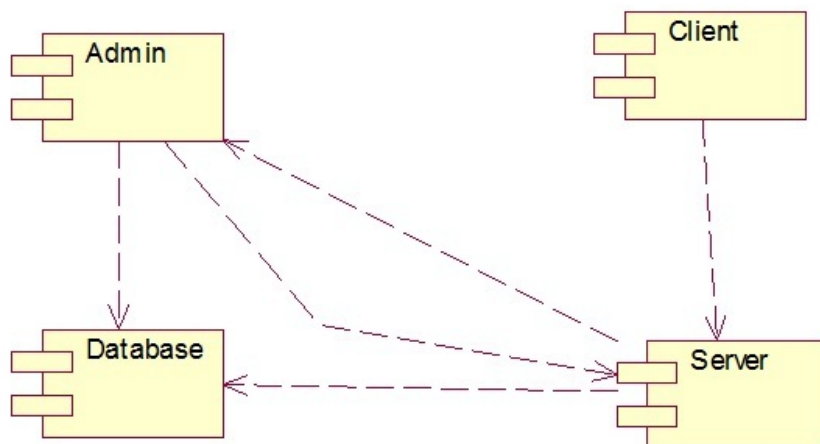


- a) Activity
 - b) State chart
 - c) Sequence
 - c) Collaboration
- View Answer

Answer: a

Explanation: None.

8. Which UML diagram is shown below?



- a) Component
 - b) Deployment
 - c) Use Case
 - d) DFD
- View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Object Oriented Design using UML

1. Which of the following is not needed to develop a system design from concept to detailed object-oriented design?

- a) Designing system architecture
- b) Developing design models
- c) Specifying interfaces
- d) Developing a debugging system

View Answer

Answer: d

Explanation: The debugging system is a part of testing phase.

2. Which of the following is a dynamic model that shows how the system interacts with its environment as it is used?

- a) system context model
- b) interaction model
- c) environmental model
- d) both system context and interaction

View Answer

Answer: b

Explanation: None.

3. Which of the following is a structural model that demonstrates the other systems in the environment of the system being developed?

- a) system context model
- b) interaction model
- c) environmental model
- d) both system context and interaction

View Answer

Answer: a

Explanation: The context model of a system may be represented using associations. Associations simply show that there are some relationships between the entities involved in the association.

4. Which of the following come under system control?

- a) Reconfigure
- b) Shutdown
- c) Powersave
- d) All of the mentioned

View Answer

Answer: d

Explanation: Functionalities are governed by the system.

5. We use _____ where various parts of system use are identified and analyzed in turn.

- a) tangible entities
- b) scenario-based analysis
- c) design-based analysis
- d) none of the mentioned

View Answer

Answer: b

Explanation: Use a scenario-based analysis where various scenarios of system use are identified and analyzed in turn.

6. Which model describes the static structure of the system using object classes and their relationships?

- a) Sequence model

- b) Subsystem model
 - c) Dynamic model
 - d) Structural model
- View Answer

Answer: d

Explanation: Important relationships that may be documented at this stage are generalization (inheritance) relationships, uses/used-by relationships, and composition relationships.

7. Which model shows the flow of object interactions?

- a) Sequence model
- b) Subsystem model
- c) Dynamic model
- d) Both Sequence and Dynamic model

View Answer

Answer: a

Explanation: Sequence model are represented using a UML sequence or a collaboration diagram and are dynamic models.

8. If the system state is Shutdown then it can respond to which of the following message?

- a) restart()
- b) reconfigure()
- c) powerSave()
- d) all of the mentioned

View Answer

Answer: d

Explanation: A restart() message causes a transition to normal operation. Both the powerSave() and reconfigure() messages cause a transition to a state in which the system reconfigures itself.

9. Which message is received so that the system moves to the Testing state, then the Transmitting state, before returning to the Running state?

- a) signalStatus()
- b) remoteControl()
- c) reconfigure()
- d) reportStatus()

View Answer

Answer: d

Explanation: None.

10. Open source development involves making the source code of a system publicly available.

- a) True
- b) False

View Answer

Answer: a

Explanation: This means that many people can propose changes and improvements to the software.

Software Engineering Questions and Answers – Analysis Modelling

1. Which of the following is not the primary objectives in the analysis model?

- a) describing the customer complaints
- b) establishing a basis for the creation of a software design
- c) defining a set of requirements that can be validated once the software is built
- d) none of the mentioned

View Answer

Answer: d

Explanation: All the options are covered in analysis model.

2. A description of each function presented in the DFD is contained in a _____

- a) data flow
- b) process specification
- c) control specification
- d) data store

View Answer

Answer: b

Explanation: None.

3. Which diagram indicates the behaviour of the system as a consequence of external events?

- a) data flow diagram
- b) state transition diagram
- c) control specification diagram
- d) workflow diagram

View Answer

Answer: b

Explanation: The state transition diagram represents the various modes of behavior (called states) of the system and the manner in which transitions are made from state to state.

4. A data model contains

- a) data object
- b) attributes
- c) relationships
- d) all of the mentioned

View Answer

Answer: d

Explanation: The data model consists of three interrelated pieces of information: the data object, the attributes that describe the data object, and the relationships that connect data objects to one another.

5. _____ defines the properties of a data object and take on one of the three different characteristics.

- a) data object
- b) attributes
- c) relationships
- d) data object and attributes

View Answer

Answer: b

Explanation: They can be used to name an instance of the data object, describe the instance, or make reference to another instance in another table.

6. The _____ of a relationship is 0 if there is no explicit need for the relationship to occur or the relationship is optional.

- a) modality
- b) cardinality
- c) entity
- d) structured analysis

View Answer

Answer: a

Explanation: The modality is 1 if an occurrence of the relationship is mandatory, else 0 for optional relationship.

7. A _____ is a graphical representation that depicts information flow and the transforms that are applied as data moves from input to output.

- a) data flow diagram
- b) state transition diagram
- c) control specification
- d) workflow diagram

View Answer

Answer: b

Explanation: The basic form of a data flow diagram, also known as a data flow graph or a bubble chart.

8. A data condition occurs whenever a data is passed to an input element followed by a processing element and the result in control output.

- a) True
- b) False

View Answer

Answer: a

Explanation: Standard flow of condition check.

9. The _____ enables the software engineer to develop models of the information domain and functional domain at the same time

- a) data flow diagram
- b) state transition diagram
- c) control specification
- d) activity diagram

View Answer

Answer: a

Explanation: As the DFD is refined into greater levels of detail, the analyst performs an implicit functional decomposition of the system, thereby accomplishing the fourth operational analysis principle for function.

10. The _____ contains a state transition diagram that is a sequential specification of behavior.

- a) data flow diagram
- b) state transition diagram
- c) control specification
- d) workflow diagram

View Answer

Answer: c

Explanation: The control specification(CSPEC) describes the behavior of the system, but it gives us no information about the inner working of the processes that are activated as a result of this behavior .

Software Engineering Questions and Answers – Component Level Design

1. Which of the following is not a construct?

- a) sequence
- b) condition
- c) repetition
- d) selection

View Answer

Answer: d

Explanation: Sequence implements processing steps that are essential in the specification of any algorithm. Condition provides the facility for selected processing based on some logical occurrence, and repetition allows for looping.

2. Which of the following steps is applied to develop a decision table?

- a) List all actions that can be associated with a specific procedure
- b) List all conditions during execution of the procedure
- c) Define rules by indicating what action(s) occurs for a set of conditions
- d) All of the mentioned

View Answer

Answer: d

Explanation: A decision table includes action stub and a condition stub with a set of rules.

3. _____ is a pidgin (simplified version of a language that develops as a means of communication between two or more groups that do not have a language in common)

- a) program design language
- b) structured English
- c) pseudocode
- d) all of the mentioned

View Answer

Answer: d

Explanation: The difference between PDL and a real programming language lies in the use of narrative text embedded directly within PDL statements.

4. Which of the following term is best defined by the statement: "The ability to represent local and global data is an essential element of component-level design."?

- a) Data representation
- b) Logic verification
- c) "Code-to" ability
- d) Automatic processing

View Answer

Answer: a

Explanation: None.

5. A software component

- a) Implements some functionality
- b) Has explicit dependencies through provides and required interfaces
- c) Communicates through its interfaces only
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the options identify with features of a software component.

6. Which diagram evolved from a desire to develop a procedural design representation that would not allow violation of the structured constructs?

- a) State transition diagram
- b) Box diagram
- c) ER diagram
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

7. A _____ executes the loop task first, then tests a condition and repeats the task until the condition fails.

- a) repeat until
- b) condition
- c) do while tests
- d) if then-else

View Answer

Answer: a

Explanation: None.

8. Which of the following is not a characteristics of box diagram?

- a) functional domain
- b) arbitrary transfer of control is impossible
- c) recursion is easy to represent
- d) providing a notation that translates actions and conditions

View Answer

Answer: d

Explanation: This functionality is covered by UML diagrams.

9. The _____ is represented as two processing boxes connected by an line (arrow) of control.

- a) Repetition
- b) Sequence
- c) Condition
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

10. Which of the following term is best defined by the statement "Notation that can be input directly into a computer-based development system offers significant benefits."?

- a) Machine readability
- b) Maintainability
- c) Structure enforcement
- d) Overall simplicity

View Answer

Answer: a

Explanation: Readability is processing input.

Software Engineering Questions and Answers – User Interface Design

1. Which of the following is golden rule for interface design?

- a) Place the user in control
- b) Reduce the user's memory load
- c) Make the interface consistent
- d) All of the mentioned

View Answer

Answer: d

Explanation: These golden rules actually form the basis for a set of user interface design principles that guide this important software design activity.

2. Which of the following is not a design principle that allow the user to maintain control?

- a) Provide for flexible interaction
- b) Allow user interaction to be interrupt-able and undo-able
- c) Show technical internals from the casual user
- d) Design for direct interaction with objects that appear on the screen

View Answer

Answer: c

Explanation: The user interface should move the user into the virtual world of the application.

3. Which of the following is not a user interface design process?

- a) User, task, and environment analysis and modeling
- b) Interface design
- c) Knowledgeable, frequent users
- d) Interface validation

View Answer

Answer: c

Explanation: These are the end user for whom the product is being built.

4. When users are involved in complex tasks, the demand on _____ can be significant.

- a) short-term memory
- b) shortcuts
- c) objects that appear on the screen
- d) all of the mentioned

View Answer

Answer: a

Explanation: The interface should be designed to reduce the requirement to remember past actions and results.

5. Which of the following option is not considered by the Interface design?

- a) the design of interfaces between software components
- b) the design of interfaces between the software and human producers and consumers of information
- c) the design of the interface between two computers
- d) all of the mentioned

View Answer

Answer: c

Explanation: None

6. A software might allow a user to interact via

- a) keyboard commands

- b) mouse movement
 - c) voice recognition commands
 - d) all of the mentioned
- View Answer

Answer: d

Explanation: All the mentioned input mediums are available today.

7. A software engineer designs the user interface by applying an iterative process that draws on predefined design principles.

- a) True
- b) False

View Answer

Answer: a

Explanation: The statement is true.

8. What incorporates data, architectural, interface, and procedural representations of the software?

- a) design model
- b) user's model
- c) mental image
- d) system image

View Answer

Answer: a

Explanation: The requirements specification may establish certain constraints that help to define the user of the system, but the interface design is often only incidental to the design model.

9. What establishes the profile of end-users of the system?

- a) design model
- b) user's model
- c) mental image
- d) system image

View Answer

Answer: b

Explanation: To build an effective user interface, all design should begin with an understanding of the intended users, including their profiles of their age, physical abilities, education, etc.

10. What combines the outward manifestation of the computer-based system, coupled with all supporting information that describe system syntax and semantics?

- a) mental image
- b) interface design
- c) system image
- d) interface validation

View Answer

Answer: c

Explanation: When the system image and the system perception are coincident, users generally feel comfortable with the software and use it effectively.

Software Engineering Questions and Answers – Test Case Design

1. What do you understand by V&V in software testing?

- a) Verified Version
- b) Version Validation
- c) Verification and Validation
- d) Version Verification

View Answer

Answer: c

Explanation: V&V generally refers to any activity that attempts to ensure that the software will function as required.

2. In static test techniques, behavioral and performance properties of the program are observed.

- a) True
- b) False

View Answer

Answer: b

Explanation: Static Analysis Techniques are based solely on the (manual or automated) examination of project documentation of software models and code.

3. Which granularity level of testing checks the behavior of module cooperation?

- a) Unit Testing
- b) Integration Testing
- c) Acceptance Testing
- d) Regression Testing

View Answer

Answer: b

Explanation: Integration testing is the phase in software testing in which individual software modules are combined and tested as a group.

4. Which test refers to the retesting of a unit, integration and system after modification, in order to ascertain that the change has not introduced new faults?

- a) Regression Test
- b) Smoke Test
- c) Alpha Test
- d) Beta Test

View Answer

Answer: a

Explanation: Regression test seeks to uncover new software bugs in existing functional and non-functional areas of a system after changes have been made to them.

5. Which of the following is a black box testing strategy?

- a) All Statements Coverage
- b) Control Structure Coverage
- c) Cause-Effect Graphs
- d) All Paths Coverage

View Answer

Answer: c

Explanation: Rest are test strategies of white box testing.

6. A set of inputs, execution preconditions and expected outcomes is known as a

- a) Test plan

- b) Test case
 - c) Test document
 - d) Test Suite
- View Answer

Answer: b

Explanation: None.

7. In which test design each input is tested at both ends of its valid range and just outside its valid range?

- a) Boundary value testing
- b) Equivalence class partitioning
- c) Boundary value testing AND Equivalence class partitioning
- d) Decision tables

View Answer

Answer: a

Explanation: Boundary value analysis is a software testing technique in which tests are designed to include representatives of boundary values.

8. A white box test scales up well at different granularity levels of testing.

- a) True
- b) False

View Answer

Answer: b

Explanation: A white box test is mostly applicable at unit and integration testing level.

9. When does the testing process stops?

- a) When resources (time and budget) are over
- b) When some coverage is reached
- c) When quality criterion is reached
- d) Testing never ends

View Answer

Answer: c

Explanation: As software testing is an exhaustive process, when the quality assurance is established and the product is ready to be delivered, testing is stopped.

10. Which of the following is not a part of a test design document?

- a) Test Plan
- b) Test Design Specification
- c) Test Case Specification
- d) Test Log

View Answer

Answer: d

Explanation: Test log is a part of testing result document.

11. Specifying a set of test cases or test paths for each item to be tested at that level is known as

- a) Test case generation
- b) Test case design
- c) ALL of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

12. Acceptance & system test planning are a part of architectural design.

- a) True
- b) False

View Answer

Answer: b

Explanation: They are a part of requirements engineering, while integration & unit test planning come under architectural design.

13. PRD stands for

- a) Product Requirement Document
- b) Project Requirement Document
- c) Product Restrictions Document
- d) None of the mentioned

View Answer

Answer: a

Explanation: A product requirements document (PRD) is a document written by a company that defines a product they are making, or the requirements for one or more new features for an existing product.

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Software Engineering Questions and Answers – Software Design Pattern

1. Which mechanism is applied to use a design pattern in an OO system?

- a) Inheritance
- b) Composition
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: Using inheritance, an existing design pattern becomes a template for a new subclass. Composition is a concept that leads to aggregate objects.

2. Design patterns does not follow the concept of software reuse.

- a) True
- b) False

View Answer

Answer: b

Explanation: Design patterns allow the designer to create the system architecture by integrating reusable components.

3. The use of design patterns for the development of object-oriented software has important implications for

- a) Component-based software engineering
- b) Reusability in general
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

4. Which of the following is a design pattern?

- a) Behavioral
- b) Structural
- c) Abstract Factory
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the options are design patterns so option d.

5. You want to minimize development cost by reusing methods? Which design pattern would you choose?

- a) Adapter Pattern
- b) Singleton Pattern
- c) Delegation pattern
- d) Immutable Pattern

View Answer

Answer: c

Explanation: The delegation pattern is a design pattern in OOP where an object, instead of performing one of its stated tasks, delegates that task to an associated helper object.

6. You want to avoid multiple inheritance. Which design pattern would you choose?

- a) Abstraction-Occurrence Pattern
- b) Player-Role Pattern

- c) General Hierarchy Pattern
- d) Singleton Pattern

View Answer

Answer: b

Explanation: The answer is self-explanatory.

7. The recurring aspects of designs are called design

- a) patterns
- b) documents
- c) structures
- d) methods

View Answer

Answer: a

Explanation: A pattern is the outline of a reusable solution to a general problem encountered in a particular context.

8. Design pattern is a solution to a problem that occurs repeatedly in a variety of contexts.

- a) True
- b) False

View Answer

Answer: a

Explanation: Each design pattern has a name and use of each pattern has consequences.

9. Which pattern prevents one from creating more than one instance of a variable?

- a) Factory Method
- b) Singleton
- c) Observer
- d) None of the mentioned

View Answer

Answer: b

Explanation: In singleton pattern, the class itself is made responsible for keeping track of its instance. Thus it ensures that no more than one instance is created.

10. Facade pattern promotes weak coupling between subsystem and its clients.

- a) True
- b) False

View Answer

Answer: a

Explanation: It is one of the patterns benefit. The facade pattern shields clients from subsystem classes and reduces the number of objects that clients deal with.

11. Which design pattern defines one-to-many dependency among objects?

- a) Singleton pattern
- b) Facade Pattern
- c) Observer pattern
- d) Factory method pattern

View Answer

Answer: c

Explanation: Observer pattern defines one-to-many dependency among objects so that when one object changes its state, all its dependents are notified.

12. Facade pattern couples a subsystem from its clients.

- a) True
- b) False

View Answer

Answer: b

Explanation: A facade can be a single entry point to each subsystem level. It decouples the subsystem.

13. In factory method pattern, the framework must instantiate classes but it only knows about the abstract classes, which it cannot initiate. How would one solve this problem?

- a) encapsulating the knowledge of which document subclass to is to be created and
- b) moving this knowledge out of the framework
- c) instantiating the application specific documents without knowing their class
- d) all of the mentioned

View Answer

Answer: d

Explanation: Following all the options in order will solve the factory method problem.

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Software Engineering Questions and Answers – Application Frameworks in Software Reuse

1. Which of the following is not a benefit of software reuse?

- a) Standards compliance
- b) Increased Reliability
- c) Reduced Process risk
- d) Maintaining a component library

View Answer

Answer: c

Explanation: There can be thousands of components in a frameworks whose maintenance is quite difficult.

2. In which of the following language the frameworks will not work?

- a) C#
- b) Ruby
- c) PHP
- d) Java

View Answer

Answer: c

Explanation: Frameworks available in all of the commonly used object-oriented programming languages.

3. Which frameworks support the development of system infrastructures such as communications, user interfaces, and compilers?

- a) Middleware integration frameworks
- b) System infrastructure framework
- c) Enterprise application frameworks
- d) Web application frameworks

View Answer

Answer: b

Explanation: None.

4. The MVC pattern was originally proposed in the 1980s as an approach to

- a) Web application frameworks
- b) Middleware integration frameworks
- c) Web application frameworks
- d) GUI design

View Answer

Answer: d

Explanation: The MVC pattern was originally proposed in the 1980s as an approach to GUI design that allowed for multiple presentations of an object and separate styles of interaction with each of these presentations.

5. MVC framework includes

- a) Observer pattern
- b) Strategy pattern
- c) Composite pattern
- d) All of the mentioned

View Answer

Answer: d

Explanation: MVC framework includes the Observer pattern, the Strategy pattern, the Composite pattern, and a number of others .

6. Which category the following statement belongs, "Classes to create and manage sessions are usually part of a WAF"?

- a) Session management

- b) Security
 - c) User interaction
 - d) Database support
- View Answer

Answer: a

Explanation: None.

7. Which framework's applications are difficult to deal with?

- a) MVC pattern
- b) Web application frameworks
- c) Debugging framework
- d) None of the mentioned

View Answer

Answer: c

Explanation: Debugging framework based applications is difficult because you may not understand how the framework methods interact. This is a general problem with reusable software .

8. Which category the following statement belongs, "Frameworks don't usually include a database but rather assume that a separate database such as MySQL"?

- a) Session management
- b) Security
- c) User interaction
- d) Database support

View Answer

Answer: d

Explanation: None.

9. Which option supports the statement: "Most web frameworks now provide AJAX support"?

- a) Session Management
- b) Security
- c) User interaction
- d) Database support

View Answer

Answer: c

Explanation: None.

10. Frameworks are an effective approach to reuse, but are _____ to introduce into software development processes.

- a) difficult
- b) expensive
- c) unreliable
- d) difficult and expensive

View Answer

Answer: d

Explanation: Frameworks can be difficult and expensive to evaluate available frameworks to choose the most appropriate one.

Software Engineering Questions and Answers – Formal Methods of Software Engineering

1. Which of the following option is not provided by formal methods?

- a) providing frameworks
- b) verifying systems
- c) provide investors
- d) both providing frameworks and verifying systems

View Answer

Answer: d

Explanation: A method is formal if it has a sound mathematical basis, typically given by a formal specification language.

2. _____ are statements that can be interpreted in a number of ways.

- a) Contradictions
- b) Ambiguities
- c) Vagueness
- d) Comments

View Answer

Answer: a

Explanation: As the name indicates, these statements may be interpreted differently as per user.

3. What defines the circumstances in which a particular operation is valid?

- a) Contradictions
- b) Post-condition
- c) Vagueness
- d) None of the mentioned

View Answer

Answer: d

Explanation: A precondition defines the circumstances in which a particular operation is valid.

4. Which of the following is a way of making a statement about the elements of a set that is true for every member of the set?

- a) Set
- b) Sequence
- c) Universal quantification
- d) Both Set and Sequence

View Answer

Answer: c

Explanation: None.

5. Which of the following occurs often due to the bulkiness of a system specification document?

- a) Contradictions
- b) Ambiguities
- c) Vagueness
- d) Incompleteness

View Answer

Answer: c

Explanation: Achieving a high level of precision consistently is an almost impossible task.

6. The _____ of a formal specification language is often based on a syntax that is derived from standard set theory notation and predicate calculus.

- a) semantic domain

- b) syntactic domain
- c) sequence
- d) set

View Answer

Answer: b

Explanation: None

7. Which of the following provides a concise, unambiguous, and consistent method for documenting system requirements?

- a) CMM
- b) ISO-9001
- c) CASE tools
- d) Formal methods

View Answer

Answer: d

Explanation: Formal methods provide a concise, unambiguous, and consistent method for documenting system requirements.

8. The _____ of a specification language indicates how the language represents system requirements.

- a) semantic domain
- b) syntactic domain
- c) sequence
- d) set

View Answer

Answer: a

Explanation: For example, a programming language has a set of formal semantics that enables the software developer to specify algorithms that transform input to output.

9. Which of the following is essential for success, when formal methods are used for the first time?

- a) Expert training
- b) Consulting
- c) Prerequisite knowledge
- d) Both Expert training and Consulting

View Answer

Answer: d

Explanation: The answer is self-explanatory.

10. It is generally not necessary to apply formal methods to every aspect of a major system.

- a) True
- b) False

View Answer

Answer: a

Explanation: Those components that are safety critical are first choices, followed by components whose failure cannot be tolerated.

Software Engineering Questions and Answers – Cleanroom Software Engineering

1. Who was first to proposed the Cleanroom philosophy in software engineering ?

- a) Mills
- b) Dyer
- c) Linger
- d) All of the Mentioned

View Answer

Answer: d

Explanation: The Cleanroom philosophy was first proposed for software engineering by Mills, Dyer, and Linger during the 1980s.

2. How does Cleanroom software engineering differs from the conventional and object-oriented views ?

- a) It makes explicit use of statistical quality control
- b) It verifies design specification using a mathematically based proof of correctness
- c) It relies heavily on statistical use testing to uncover high-impact errors
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

3. Cleanroom software engineering complies with the operational analysis principles by using a method called known as

- a) box structure specification
- b) referential transparency
- c) degenerative error correction
- d) none of the mentioned

View Answer

Answer: a

Explanation: Box structures are descriptions of functions that exhibit properties essential for effective system specification and design.

4. What encapsulates state data and services in a manner that is analogous to objects?

- a) State box
- b) Clean box
- c) White box
- d) Black box

View Answer

Answer: a

Explanation: In this specification view, inputs to the state box (stimuli) and outputs (responses) are represented.

5. MTTF stands for

- a) mean-time-to-function
- b) mean-time-to-failure
- c) manufacture-time-to-function
- d) none of the mentioned

View Answer

Answer: b

Explanation: None.

6. The transition functions that are implied by the state box are defined in

- a) Yellow box
- b) Clear box

- c) White box
 - d) Black box
- View Answer

Answer: b

Explanation: Stated simply, a clear box contains the procedural design for the state box.

7. Which of the following is not included in the certification approach?

- a) Creation of usage scenarios
- b) Specific usage file
- c) Generation of test cases from the servers end.
- d) Reliability

View Answer

Answer: c

Explanation: This is a part of testing phase and can be as exhaustive as possible.

8. The _____ specifies the behavior of a system or a part of a system.

- a) Yellow box
- b) Clear box
- c) White box
- d) Black box

View Answer

Answer: d

Explanation: The system (or part) responds to specific stimuli (events) by applying a set of transition rules that map the stimulus into a response.

9. Which of the following is required for Certification for cleanroom software engineering?

- a) Sampling model
- b) Component model
- c) Certification model
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

10. The philosophy of Cleanroom SE focuses on defect removal rather than defect avoidance.

- a) True
- b) False

View Answer

Answer: b

Explanation: The philosophy focuses on defect avoidance rather than defect removal.

11. Which of the following Cleanroom process teams develops set of statistical test to exercise software after development?

- a) Specification team
- b) Development team
- c) Certification team
- d) All of the mentioned

View Answer

Answer: b

Explanation: None.

Software Engineering Questions and Answers – Component Based Software Engineering

1. A software element conforms to a standard component model and can be independently deployed and composed without modification according to a composition standard.

- a) True
- b) False

View Answer

Answer: a

Explanation: This definition is essentially based on standards so that a software unit that conforms to these standards is a component.

2. Which of the following is a feature of CBSE?

- a) It increases quality
- b) CBSE shortens delivery time
- c) CBSE increases productivity
- d) All of the mentioned

View Answer

Answer: d

Explanation: CBSE increases quality, especially evolvability and maintainability. Other options are also favor CBSE.

3. Which of the following term is best defined by the statement: "For a component to be composable, all external interactions must take place through publicly defined interfaces"?

- a) Standardized
- b) Independent
- c) Composable
- d) Documented

View Answer

Answer: c

Explanation: The answer is self explanatory.

4. A component model defines standards for

- a) properties
- b) methods
- c) mechanisms
- d) all of the mentioned

View Answer

Answer: d

Explanation: A component model defines standards for properties individual components must satisfy and methods and mechanisms for composing components.

5. Which of the following is not an example of component technology?

- a) EJB
- b) COM+
- c) .NET
- d) None of the mentioned

View Answer

Answer: d

Explanation: All the options supports the implementation, assembly, deployment, execution of components.

6. Which of the following term is best defined by the statement: "The operations on each side of the interface have the same name but their parameter types or the number of parameters are different."?

- a) Parameter incompatibility
- b) Operation incompleteness
- c) Operation incompatibility
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

7. Which of the following term is best defined by the statement: “The names of the operations in the ‘provides’ and ‘requires’ interfaces are different.”?

- a) Parameter incompatibility
- b) Operation incompleteness
- c) Operation incompatibility
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

8. A _____ defines a set of standards for components, including interface standards, usage standards, and deployment standards.

- a) Component-based software engineering
- b) Component composition
- c) Component model
- d) Component interfaces

View Answer

Answer: c

Explanation: The implementation of the component model provides a set of common services that may be used by all components.

9. When composing reusable components that have not been written for your application, you may need to write adaptors or ‘glue code’ to reconcile the different _____

- a) Component modules
- b) Component composition
- c) Component model
- d) Component interfaces

View Answer

Answer: c

Explanation: None.

10. _____ is a reuse-based approach to defining, implementing, and composing loosely coupled independent components into systems.

- a) Component-based software engineering
- b) Component composition
- c) Component model
- d) Component interfaces

View Answer

Answer: d

Explanation: Component Interfaces are PeopleSoft’s way of exposing the business logic developed into Components for consumption by other areas of the system.

Software Engineering Questions and Answers – Distributed Software Engineering

1. Which of the following term is best defined by the statement “In a distributed system, several processes may operate at the same time on separate computers on the network.”?

- a) Concurrency
- b) Openness
- c) Resource sharing
- d) Fault tolerance

[View Answer](#)

Answer: a

Explanation: None.

2. Which of the following is not a dimension of scalability?

- a) Size
- b) Distribution
- c) Manageability
- d) Interception

[View Answer](#)

Answer: d

Explanation: Interception is a communication conception.

3. A distributed system must defend itself against

- a) Modification
- b) Interruption
- c) Fabrication
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

4. QoS stands for

- a) Quality of security
- b) Quality of system
- c) Quality of service
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: QoS is particularly critical when the system is dealing with time-critical data such as sound or video streams.

5. In Java, _____ are comparable with, though not identical to, RPCs.

- a) Remote Method Invocations
- b) Operating System
- c) Client–server computing
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The RMI framework handles the invocation of remote methods in a Java program.

6. _____ depend on there being a clear separation between the presentation of information and the computations that create and process that information.

- a) Master-slave architectures
- b) Client-server systems
- c) Two-tier client-server architecture
- d) Both Master-slave architectures AND Client-server systems

View Answer

Answer: b

Explanation: One should design the architecture of distributed client-server systems so that they are structured into several logical layers, with clear interfaces between these layers.

7. Which architecture is used when there is a high volume of transactions to be processed by the server?

- a) Multi-tier client-server architecture
- b) Master-slave architecture
- c) Distributed component architecture
- d) Peer-to-peer architecture

View Answer

Answer: a

Explanation: Multi-tier systems may be used when applications need to access and use data from different databases.

8. Which architecture are reliant on middle-ware?

- a) Multi-tier client-server architecture
- b) Master-slave architecture
- c) Distributed component architecture
- d) Peer-to-peer architecture

View Answer

Answer: c

Explanation: It allows the system designer to delay decisions on where and how services should be provided.

9. _____ is a way of providing functionality on a remote server with client access through a web browser.

- a) SaaS
- b) SOA
- c) Configurability
- d) Both SaaS and Configurability

View Answer

Answer: a

Explanation: The server maintains the user's data and state during an interaction session.

10. Which architecture decentralized architectures in which there are no distinguished clients and servers?

- a) Multi-tier client-server architecture
- b) Master-slave architecture
- c) Distributed component architecture
- d) Peer-to-peer architecture

View Answer

Answer: d

Explanation: Peer-to-peer (p2p) systems are decentralized systems in which computations may be carried out by any node on the network.

Software Engineering Questions and Answers – Service Oriented Architecture

1. Service Oriented Architecture (SOA) is

- a) Strongly Coupled
- b) Loosely Coupled
- c) Strongly Cohesive
- d) Loosely Cohesive

View Answer

Answer: b

Explanation: SOA is the architectural style that supports loosely coupled services to enable business flexibility.

2. Which of the following is an essential principle of an architecture?

- a) Consistency
- b) Reliability
- c) Scalability
- d) All of the mentioned

View Answer

Answer: d

Explanation: Architecture implies a consistent and coherent design approach.

3. Arrange the following activities in order to build a SOA.

- i. Virtualization through mediation.
- ii. Track services with registries.
- iii. Govern, secure and manage the services.
- iv. Design for interoperability through the adoption of standards.

- a) i, ii, iii, iv
- b) iii, ii, i, iv
- c) ii, iii, i, iv
- d) ii, iii, iv, i

View Answer

Answer: c

Explanation: The order mentioned is appropriate to build a SOA

4. How is SOA different from OO Architecture ?

- a) Strong coupling among objects
- b) Communications are prescriptive rather than being descriptive
- c) Data is separated from a service or behavior
- d) Data and methods are integrated into a single object

View Answer

Answer: c

Explanation: A service-oriented architecture is essentially a collection of services which communicate with each other.

5. Which architecture will be built on top of a SOA ?

- a) The Application Architecture
- b) The Service Architecture
- c) The Component Architecture
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

6. Which of the following utilities is not a part of Application Service Layer ?

- a) Policy implementation
- b) QoS
- c) Security
- d) Verify invoice

View Answer

Answer: d

Explanation: It is a part of Business service layer.

7. Which of the following utilities is not a part of Business Service Layer ?

- a) Task centric service
- b) Wrapper Services
- c) Get account info
- d) Entity centric service

View Answer

Answer: b

Explanation: It is a part of Application service layer.

8. We can build Service Oriented Architecture (SOA) using Object Oriented (OO) language

- a) True
- b) False

View Answer

Answer: a

Explanation: In SOA, the design methodology is associated, not an OO programming language. In fact we can do OO based architecture using non OO languages. Likewise we can build SOA using OO language.

9. Which architecture describes the various elements that support the implementation of services.

- a) The Application Architecture
- b) The Service Architecture
- c) The Component Architecture
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

10. Web Services is not a realization of SOA ?

- a) True
- b) False

View Answer

Answer: b

Explanation: Web services is one realization of the SOA.

Software Engineering Questions and Answers – Embedded Software

1. Which of the following is a category of a stimuli?

- a) Periodic stimuli
- b) Software stimuli
- c) Hardware stimuli
- d) Management stimuli

View Answer

Answer: a

Explanation: Periodic stimuli occur at predictable time intervals. For example, the system may examine a sensor every 50 milliseconds and take action depending on that sensor value.

2. Which of the following activities may be included in a real-time software design process?

- a) Platform selection
- b) Timing analysis
- c) Process design
- d) All of the mentioned

View Answer

Answer: d

Explanation: All these can be implemented.

3. Which of the following is not a real-time architectural pattern

- a) Observe and React
- b) Environmental Control
- c) Embedded System
- d) Process Pipeline

View Answer

Answer: c

Explanation: Embedded systems' patterns are process-oriented rather than object- or component-oriented .

4. RTOS stands for

- a) real-life operating system
- b) real-time operating system
- c) real-time operating software
- d) real-life operating software

View Answer

Answer: b

Explanation: Embedded applications are built on top of a real-time operating system (RTOS).

5. The times by which stimuli must be processed and some response produced by the system is known as

- a) Compile time
- b) Frequency
- c) Deadlines
- d) Execution time

View Answer

Answer: c

Explanation: If the system does not meet a deadline then, it results in a system failure; in a soft real-time system, it results in degraded system service .

6. The switch to backup power must be completed within a deadline of

- a) 50 ms
 - b) 55 ms
 - c) 70 ms
 - d) 100 ms
- View Answer

Answer: a

Explanation: The time required to power failure stimuli is 50 millisecond.

7. An example of a system that may use a process pipeline is a _____
- a) High-speed data acquisition system
 - b) Failure of a power supply in an embedded system
 - c) Both High-speed data acquisition system AND Failure of a power supply in an embedded system
 - d) None of the mentioned
- View Answer

Answer: a

Explanation: Data acquisition systems collect data from sensors for subsequent processing and analysis. These systems are used in situations where the sensors are collecting a lot of data from the system's environment and it isn't possible or necessary to process that data in real time.

8. Periodic occur irregularly and unpredictably and are usually signaled using the computer's interrupt mechanism.
- a) True
 - b) False
- View Answer

Answer: b

Explanation: This is the case for Aperiodic stimuli

9. If you detect power failure by monitoring a voltage level, you have to make more than one observation to detect that the voltage is dropping.
- a) True
 - b) False
- View Answer

Answer: a

Explanation: If you run the process 250 times per second, this means that it runs every 4 ms and you may require up to two periods to detect the voltage drop.

10. The average execution time of the power monitor process should be less than
- a) 1ms
 - b) 10ms
 - c) 100ms
 - d) none of the mentioned
- View Answer

Answer: a

Explanation: General embedded software property.

Software Engineering Questions and Answers – Aspect Oriented Software Engineering

1. Which of the following diagrams can help spot points cuts?

- a) Class diagram
- b) Object diagram
- c) Sequence diagram
- d) ER diagram

View Answer

Answer: b

Explanation: In AOSE, sequence diagrams can help spot where pointcuts need to be set.

2. Which of the following is represented as an aspect that requests a login name and password?

- a) Class
- b) Object
- c) User authentication
- d) All of the mentioned

View Answer

Answer: c

Explanation: User authentication may be represented as an aspect that requests a login name and password. This can be automatically woven into the program wherever authentication is required.

3. Research and development in aspect-orientation has primarily focused on

- a) software re-engineering
- b) artificial programming
- c) aspect-oriented programming
- d) all of the mentioned

View Answer

Answer: c

Explanation: Aspect-oriented programming languages such as AspectJ have been developed that extend object-oriented programming to include aspects.

4. Which of the following is a key principle of software design and implementation?

- a) Separation of concerns
- b) Writing aspects
- c) Finding code complexity
- d) None of the mentioned

View Answer

Answer: a

Explanation: The separation of concerns is a key principle of software design and implementation. It means that you should organize your software so that each element in the program (class, method, procedure, etc.) does one thing and one thing only.

5. Which of the following is not a type of stakeholder concern?

- a) Functional concerns
- b) Quality of service concerns
- c) Policy concern
- d) Non-functional concern

View Answer

Answer: a

Explanation: The core concerns of a system are those functional concerns that relate to its primary purpose.

6. Which of the following concerns best suits the following statement: "Internet banking system includes new customer requirements, account Requirements, customer management requirements, security requirements, recovery requirements etc." ?

- a) Functional concerns
- b) Quality of service concerns
- c) System concerns
- d) Cross-cutting concerns

View Answer

Answer: d

Explanation: Cross-cutting concerns, which is based on an example of an Internet banking system. This system has requirements relating to new customers such as credit checking and address verification.

7. Which of the following is core concern in medical record management system?

- a) maintaining records of patients
- b) diagnose and treatments
- c) consultations
- d) all of the mentioned

View Answer

Answer: a

Explanation: None.

8. An event in an executing program where the advice associated with an aspect may be executed is known as

- a) aspect
- b) join point
- c) join point model
- d) pointcut

View Answer

Answer: b

Explanation: None.

9. The incorporation of advice code at the specified join points by an aspect weaver is called".

- a) aspect
- b) join point
- c) join point model
- d) weaving

View Answer

Answer: d

Explanation: None.

10. Which of the following is needed by Maintenance staff?

- a) A specific type of equipment
- b) Maintenance record for each and every equipment item
- c) Check in/check out equipment for maintenance
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the options are essential for effective maintenance.

11. An aspect is only static.

- a) True
- b) False

View Answer

Answer: d

Explanation: An aspect is a class-like structure to encapsulate cross-cut concerns that can be static or dynamic.

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Software Engineering Questions and Answers – Client Server Software Engineering

1. The _____ is connected to servers (typically powerful workstations or PCs) that play a dual role.

- a) Database
- b) Software
- c) Hardware
- d) None of the mentioned

View Answer

Answer: d

Explanation: A root system, sometimes a mainframe, serves as the repository for corporate data plays a dual role.

2. Which of the following term is best defined by the statement: "The client sends structured query language (SQL) requests to the server which are transmitted as messages across the net"?

- a) File servers
- b) Database servers
- c) Client servers
- d) None of the mentioned

View Answer

Answer: b

Explanation: SQL is a database language.

3. Which subsystem implements the requirements defined by the application?

- a) UI
- b) DBMS
- c) Application subsystem
- d) None of the mentioned

View Answer

Answer: c

Explanation: This subsystem implements the requirements defined by the application within the context of the domain in which the application operates.

4. Which test do you infer from the following statement: "The coordination and data management functions of the server are tested."?

- a) Server tests
- b) Application function tests
- c) Transaction tests
- d) Network communication tests

View Answer

Answer: a

Explanation: None

5. Which of the following presentation is explained in the following statement: "An extension of the distributed presentation approach, primary database and application logic remain on the server, and data sent by the server is used by the client to prepare the user presentation."?

- a) Local Presentation
- b) Distributed presentation
- c) Remote presentation
- d) All of the mentioned

View Answer

Answer: c

Explanation: None.

6. "A client is assigned all user presentation tasks and the processes associated with data entry". Which option supports the client's situation?

- a) Distributed logic
- b) Distributed presentation
- c) Remote presentation
- d) All of the mentioned

View Answer

Answer: a

Explanation: The server is assigned database management tasks, the processes for client queries, and enterprise-wide applications.

7. What is used to pass SQL requests and associated data from one component to another?

- a) Client/server SQL interaction
- b) Remote procedure calls
- c) SQL Injection
- d) All of the mentioned

View Answer

Answer: a

Explanation: This mechanism is limited to relational database management system (RDBMS) applications.

8. When a client application invokes a method contained within an object elsewhere in the system, CORBA uses dynamic invocation to

- a) obtain pertinent information about the desired method from the interface repository
- b) create a data structure with parameters to be passed to the object
- c) create a request for the object
- d) all of the mentioned

View Answer

Answer: d

Explanation: The request is then passed to the ORB core—an implementation-specific part of the network operating system that manages requests, and the request is fulfilled.

9. Which of the following services is not provided by an object?

- a) Activating & Deactivating Objects
- b) Security features
- c) Files implementing the entities identified within the ERD
- d) Registering object implementation

View Answer

Answer: c

Explanation: An ERD is not a part of UML.

10. Which of the following term is best defined by the statement: "When one object invokes another independent object, a message is passed between the two objects."?

- a) Control couple
- b) Application object
- c) Data couple
- d) Database object

View Answer

Answer: c

Explanation: None.

11. CORBA stands for

- a) Common Object Request Build Architecture
- b) Common Object Request Broker Architecture
- c) Common Object Request Break Architecture
- d) All of the mentioned

View Answer

Answer: b

Explanation: None.

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Software Engineering Questions and Answers – Web Engineering

1. Which web app attribute is defined by the statement: "A large number of users may access the WebApp at one time"?

- a) Unpredictable load
- b) Performance
- c) Concurrency
- d) Network intensiveness

View Answer

Answer: c

Explanation: None.

2. Which web app attribute is defined by the statement: "The quality and aesthetic nature of content remains an important determinant of the quality of a WebApp"?

- a) Availability
- b) Data driven
- c) Content sensitive
- d) Continuous evolution

View Answer

Answer: c

Explanation: None.

3. If the user queries a collection of large databases and extracts information from the webapp, the webapp is categorized under

- a) Service oriented app
- b) Database access app
- c) Portal app
- d) Data warehousing app

View Answer

Answer: d

Explanation: The Data Warehouse is a stable, read-only database that combines information from separate systems into one, easy-to-access location.

4. Which process model should be used in virtually all situations of web engineering?

- a) Incremental Model
- b) Waterfall Model
- c) Spiral Model
- d) None of the mentioned

View Answer

Answer: a

Explanation: The web engineering process must accommodate incremental delivery, frequent changes and short timeline.

5. Which analysis is a part of Analysis model of the web engineering process framework?

- a) Content Analysis
- b) Interaction Analysis
- c) Functional Analysis
- d) All of the mentioned

View Answer

Answer: d

Explanation: Analysis model establishes a basis for design which requires all the mentioned options.

6. Web development and software development are one and the same thing.

- a) True
 - b) False
- View Answer

Answer: b

Explanation: They are different due to the nature and distinct requirements of Web-based systems.

7. Web-based systems are often document-oriented containing static or dynamic content.

- a) True
 - b) False
- View Answer

Answer: a

Explanation: In web-based systems, more emphasis is on “look and feel” of the product.

8. Web-based systems apply the same levels of formal planning and testing used in software development.

- a) True
 - b) False
- View Answer

Answer: b

Explanation: Web-based systems are typically constrained to a short development time making it difficult to apply the same levels of formal planning and testing used in software development.

9. Which of the following statements are incorrect with reference to web-based systems? Web-based systems

- a) should be unscalable
- b) must be able to cope with uncertain, random heavy demands on services
- c) must be secure
- d) are subject to assorted legal, social, and ethical scrutiny

View Answer

Answer: a

Explanation: Web-based systems should be scalable.

10. What category of web-based system would you assign to electronic shopping?

- a) Informational
- b) Interactive
- c) Transaction-oriented
- d) Workflow-oriented

View Answer

Answer: c

Explanation: It involves usage of transaction management of database systems.

11. What category of web-based system would you assign to discussion groups?

- a) Collaborative work
- b) Online communities
- c) Web portals
- d) Workflow-oriented

View Answer

Answer: b

Explanation: None.

12. W3C stands for

- a) World Wide Web Consortium

- b) World Wide Web Collaboration
- c) World Wide Web Community
- d) None of the mentioned

View Answer

Answer: a

Explanation: W3C is an international consortium where member organizations, a full-time staff, and the public work together to develop web standards.

13. Which of the following is a risk associated with using hypertext in web applications?

- a) Loss of sense of locality and direction
- b) Cognitive overload for users
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: Hypertexts and links may divert the users attention from the main content.

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Software Engineering Questions and Answers – Software Re-engineering

1. What are the problems with re-structuring?

- a) Loss of comments
- b) Loss of documentation
- c) Heavy computational demands
- d) All of the mentioned

View Answer

Answer: b

Explanation: Restructuring doesn't help with poor modularisation where related components are dispersed throughout the code.

2. Which of the following is not a module type?

- a) Object modules
- b) Hardware modules
- c) Functional modules
- d) Process support modules

View Answer

Answer: a

Explanation: Except option a all other are module types.

3. Reverse engineering of data focuses on

- a) Internal data structures
- b) Database structures
- c) ALL of the mentioned
- d) None of the mentioned

View Answer

Answer: c

Explanation: None.

4. Forward engineering is not necessary if an existing software product is producing the correct output.

- a) True
- b) False

View Answer

Answer: b

Explanation: Forward engineering refers to taking a high-level model and using it to build a more complex lower-level implementation.

5. Which of the following is not an example of a business process?

- a) designing a new product
- b) hiring an employee
- c) purchasing services
- d) testing software

View Answer

Answer: d

Explanation: It is a part of development phase.

6. Which of the following is a data problem?

- a) hardware problem
- b) record organisation problems
- c) heavy computational demands
- d) loss of comments

View Answer

Answer: b

Explanation: Records representing the same entity may be organised differently in different programs.

7. When does one decides to re-engineer a product?

- a) when tools to support restructuring are disabled
- b) when system crashes frequently
- c) when hardware or software support becomes obsolete
- d) subsystems of a larger system require few maintenance

View Answer

Answer: c

Explanation: Re-engineering involves putting in the effort to make the system easier to maintain.

8. Which of the following is not a business goal of re-engineering ?

- a) Cost reduction
- b) Time reduction
- c) Maintainability
- d) None of the mentioned

View Answer

Answer: d

Explanation: No such goal is mentioned which is not a business goal, so option d is correct here.

9. Which of these benefits can be achieved when software is restructured?

- a) Higher quality programs
- b) Reduced maintenance effort
- c) Software easier to test
- d) All of the mentioned

View Answer

Answer: d

Explanation: The answer is self explanatory.

10. Data re-engineering may be part of the process of migrating from a file-based system to a DBMS-based system or changing from one DBMS to another.

- a) True
- b) False

View Answer

Answer: a

Explanation: Data re-engineering involves analyzing and reorganizing the data structures in a program.

11. BPR stands for

- a) Business process re-engineering
- b) Business product re-engineering
- c) Business process requirements
- d) None of the mentioned

View Answer

Answer: a

Explanation: The answer is self explanatory.

12. Source code translation is a part of which re-engineering technique?

- a) Data re-engineering

- b) Refactoring
 - c) Restructuring
 - d) None of the mentioned
- View Answer

Answer: c

Explanation: Restructuring involves automatic conversion from unstructured to structured code.

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Software Engineering Questions and Answers – Reverse Engineering

1. In reverse engineering process, what refers to the sophistication of the design information that can be extracted from the source code?

- a) interactivity
- b) completeness
- c) abstraction level
- d) direction level

View Answer

Answer: c

Explanation: None.

2. In reverse engineering, what refers to the level of detail that is provided at an abstraction level?

- a) interactivity
- b) completeness
- c) abstraction level
- d) directionality

View Answer

Answer: b

Explanation: None.

3. The core of reverse engineering is an activity called

- a) restructure code
- b) directionality
- c) extract abstractions
- d) interactivity

View Answer

Answer: c

Explanation: The engineer must evaluate the old program and extract a meaningful specification of the processing that is performed, the user interface that is applied, and the program data structures or database that is used.

4. What have become de rigueur for computer-based products and systems of every type?

- a) GUIs
- b) Candidate keys
- c) Object model
- d) All of the mentioned

View Answer

Answer: a

Explanation: Therefore, the redevelopment of user interfaces has become one of the most common types of re-engineering activity. But before a user interface can be rebuilt, reverse engineering should occur.

5. Forward engineering is also known as

- a) extract abstractions
- b) renovation
- c) reclamation
- d) both renovation and reclamation

View Answer

Answer: d

Explanation: Forward engineering, also called renovation or reclamation, not only recovers design information from existing software, but uses this information to alter or reconstitute the existing system in an effort to improve its overall quality.

6. Reverse engineering is the process of deriving the system design and specification from its

- a) GUI
- b) Database
- c) Source code
- d) All of the mentioned

View Answer

Answer: c

Explanation: None

7. Reverse engineering techniques for internal program data focus on the definition of classes of objects.

- a) True
- b) False

View Answer

Answer: a

Explanation: This is accomplished by examining the program code with the intent of grouping related program variables.

8. Which of the following steps may not be used to define the existing data model as a precursor to re-engineering a new database model:

- a) Build an initial object model
- b) Determine candidate keys
- c) Refine the tentative classes
- d) Discover user interfaces

View Answer

Answer: d

Explanation: Once information defined in the preceding steps is known, a series of transformations can be applied to map the old database structure into a new database structure.

9. Much of the information necessary to create a behavioral model can be obtained by observing the external manifestation of the existing

- a) candidate keys
- b) interface
- c) database structure
- d) none of the mentioned

View Answer

Answer: b

Explanation: The GUI or the interface provides the base for the behavioral model.

10. Extracting data items and objects, to get information on data flow, and to understand the existing data structures that have been implemented is sometimes called

- a) data analysis
- b) directionality
- c) data extraction
- d) client applications

View Answer

Answer: a

Explanation: None.

11. Reverse engineering and Re-engineering are equivalent processes of software engineering.

- a) True
- b) False

View Answer

Answer: b

Explanation: Re engineering is a process of analysis and change whereby a system is modified by first reverse engineering and then forward

engineering.

12. Transformation of a system from one representational form to another is known as

- a) Re-factoring
- b) Restructuring
- c) Forward engineering
- d) Both Re-factoring and Restructuring

View Answer

Answer: d

Explanation: None.

13. Which of the following is not an objective of reverse engineering?

- a) to reduce maintenance effort
- b) to cope with complexity
- c) to avoid side effects
- d) to assist migration to a CASE environment

View Answer

Answer: d

Explanation: Reverse engineering helps us to detect side effects rather than avoiding them.

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Software Engineering Questions and Answers – Computer Aided Software Engineering

1. Which of the following is software engineer's primary characteristics?

- a) A collection of useful tools that will help in every step of building a product
- b) An organized layout that enables tools to be found quickly and used efficiently
- c) A skilled artisan who understands how to use the tools in an effective manner
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

2. Database management software serves as a foundation for the establishment of a CASE database (repository) that we call

- a) project database
- b) system database
- c) analysis and design tools
- d) prototyping tools

View Answer

Answer: a

Explanation: Given the emphasis on configuration objects, database management tools for CASE are evolving from relational database management systems to object oriented database management systems.

3. What enables a software engineer to defined screen layout rapidly for interactive applications?

- a) Analysis and design tools
- b) Tool kit
- c) Screen painters
- d) PRO/SIM tools

View Answer

Answer: c

Explanation: More sophisticated CASE prototyping tools enable the creation of a data design, coupled with both screen and report layouts.

4. _____ tools assist in the planning, development, and control in CASE.

- a) Dynamic measurement
- b) Data acquisition
- c) Test management
- d) Cross-functional tools

View Answer

Answer: c

Explanation: None.

5. Which tools cross the bounds of the preceding categories?

- a) Data acquisition
- b) Dynamic measurement
- c) Cross-functional tools
- d) Simulation

View Answer

Answer: c

Explanation: None.

6. Which environment demands specialized testing tools that exercise the graphical user interface and the network communications requirements for client and server?

- a) Dynamic analysis
- b) Client/Server
- c) Re-engineering
- d) Test management

View Answer

Answer: b

Explanation: A client/server architecture is GUI based.

7. Which tools are used to modify online database systems?

- a) Reverse engineering specification tools
- b) Code restructuring and analysis tools
- c) Test management tools
- d) online system re-engineering tools

View Answer

Answer: d

Explanation: For example these tools convert IDMS or DB2 files into entity-relationship format.

8. Which is the definition of objects in the database that leads directly to a standard approach for the creation of software engineering documents.

- a) Document standardization
- b) Data integrity
- c) Information sharing
- d) Data/data integration

View Answer

Answer: a

Explanation: None.

9. Which of the following term is best defined by the statement: "CASE tools and the target applications are isolated from physical storage so they are not affected when the hardware configuration is changed."?

- a) Non-redundant data storage
- b) Data independence
- c) Data dependence
- d) Ad Hoc data queries and reports

View Answer

Answer: b

Explanation: None.

10. Which of the following term is best define by the statement:"Each object is stored only once, but is accessible by all CASE tools that need it."?

- a) Non-redundant data storage
- b) Data independence
- c) Transaction control
- d) Ad Hoc data queries and reports

View Answer

Answer: a

Explanation: None.

Software Engineering Questions and Answers – Using CASE Tools

1. CASE stands for

- a) Cost Aided Software Engineering
- b) Computer Aided Software Engineering
- c) Control Aided Software Engineering
- d) None of the mentioned

View Answer

Answer: b

Explanation: CASE tools purpose is to make the work of software development and maintenance easier and more reliable.

2. CASE tools are used only during the software testing phase.

- a) True
- b) False

View Answer

Answer: b

Explanation: CASE tools support the developer when performing one or more phases of the software life cycle and/or support software maintenance.

3. Which of the following is not a type of CASE tool?

- a) Lower
- b) Classic
- c) Real
- d) Middle

View Answer

Answer: d

Explanation: Lower and Upper CASE tools support analysis and design.

4. What stores all changes and info related to the project from development through maintenance in CASE tools?

- a) Database
- b) Repository
- c) Registers
- d) None of the mentioned

View Answer

Answer: b

Explanation: The main component of real CASE tools is the repository which stores all changes.

5. What kind of support is provided by the Repository Query CASE tool?

- a) Editing text and diagrams
- b) Display of parts of the design texts
- c) Cross referencing queries and requirements tracing
- d) Display of parts of the design texts AND Cross referencing queries and requirements tracing

View Answer

Answer: d

Explanation: None.

6. What kind of support is provided by the Code Generation CASE tool?

- a) Cross referencing queries and requirements tracing
- b) Transformation of design records into application software
- c) Compiling, interpreting or applying interactive debugging code

d) Transformation of design records into application software AND Compiling, interpreting or applying interactive debugging code
View Answer

Answer: b

Explanation: Code Generation tool aids in transformation of design records into prototypes or application software compatible with a given software development language.

7. Logical design errors can be resolved using both classic and real CASE tools.

- a) True
- b) False

View Answer

Answer: b

Explanation: Classic CASE tools include interactive debuggers and compilers which do not serve the required purpose.

8. CASE-generated updated documentation enables easier and more reliable identification of software failure causes.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

9. What kind of support is provided by the Code Editing CASE tool?

- a) Management of design documents and software code versions
- b) Transformation of design records into application software
- c) Compiling, interpreting or applying interactive debugging code
- d) None of the mentioned

View Answer

Answer: c

Explanation: Code editing tool serves the purpose of compiling, interpreting or applying interactive debugging code specific coding language or development tool.

10. Use of the repository assures automated coding and documentation of corrections.

- a) True
- b) False

View Answer

Answer: b

Explanation: Use of the repository assures consistency of new applications and improvements with existing software systems.

11. Which of the following is a drawback of using CASE tool?

- a) Standardization of notations and diagrams
- b) Communication between development team member
- c) Costs associated with the use of the tool
- d) Reduction of time and effort

View Answer

Answer: c

Explanation: Using CASE tools is an expensive approach.

12. An upper CASE tool is also referred to as a back end CASE.

- a) True
- b) False

View Answer

Answer: b

Explanation: An upper CASE tool (front end CASE) provides support for the early stages in the systems development life cycle such as requirements analysis and design.

13. CASE tools are mainly used while developing which of the following methodologies?

- a) RAD
- b) JAD
- c) OO Approach
- d) All of the mentioned

View Answer

Answer: d

Explanation: CASE tools are used in various stages of the Software Development Life Cycle.

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Software Engineering Questions and Answers – Software Reliability

1. Which of the following is not a phase of “bathtub curve” of hardware reliability?

- a) Useful Life
- b) Burn-in
- c) Wear-out
- d) Time

View Answer

Answer: d

Explanation: Time is the horizontal dimension on which the bathtub curve is built and not the phase.

2. How is reliability and failure intensity related to each other?

- a) direct relation
- b) inverse relation
- c) no relation
- d) none of the mentioned

View Answer

Answer: b

Explanation: As the reliability increases, failure intensity decreases.

3. How many product quality factors are proposed in McCall quality model?

- a) 2
- b) 3
- c) 11
- d) 8

View Answer

Answer: b

Explanation: McCall quality model has three product quality factors namely: Product revision, Product operation, Product Transition .

4. Which one of the following is not a software quality model?

- a) ISO 9000
- b) McCall model
- c) Boehm model
- d) ISO 9126

View Answer

Answer: a

Explanation: ISO-9000 series of standards is a set of document dealing with quality systems that can be used for quality assurance purposes.

5. What is MTTF ?

- a) Maximum time to failure
- b) Mean time to failure
- c) Minimum time to failure
- d) None of the mentioned

View Answer

Answer: b

Explanation: None.

6. How is software reliability defined?

- a) time
- b) efficiency

- c) quality
 - d) speed
- View Answer

Answer: a

Explanation: Software Reliability mainly concerned with the time component. It can be seen in various models like Basic Execution Time Model and Logarithmic Poisson Execution Time Model.

7. Suitability, Accuracy, Interoperability, and security are what type quality attribute of ISO 9126 ?

- a) Reliability
- b) Efficiency
- c) Functionality
- d) Usability

View Answer

Answer: c

Explanation: All the Characteristics mentioned in the question are related to achievement of the basic purpose for which the software is being engineered, which is functionality.

8. Time Behavior and Resource Behavior fall under which quality attribute of ISO 9126 ?

- a) Reliability
- b) Efficiency
- c) Functionality
- d) Usability

View Answer

Answer: b

Explanation: The Characteristics mentioned in the question are related to the relationship between the level of performance of the software and the amount of resources used, under stated conditions.

9. NHPP stands for

- a) Non Homogeneous Poisson Product
- b) Non-Hetrogeneous Poisson Product
- c) Non-Hetrogeneous Poisson Process
- d) Non Homogeneous Poisson Process

View Answer

Answer: d

Explanation: None.

10. The CMM model is a technique to

- a) automatically maintain the software reliability
- b) improve the software process.
- c) test the software
- d) all of the mentioned

View Answer

Answer: b

Explanation: Capability Maturity Model (CMM) is a strategy for improving the software process, irrespective of the actual life cycle model used.

Software Engineering Questions and Answers – Fault Tolerance

1. What type of fault remains in the system for some period and then disappears?

- a) Permanent
- b) Transient
- c) Intermittent
- d) All of the mentioned

View Answer

Answer: b

Explanation: For example many faults in communication systems are transient in nature.

2. Which of the following approaches are used to achieve reliable systems?

- a) Fault prevention
- b) Fault removal
- c) Fault tolerance
- d) All of the mentioned

View Answer

Answer: d

Explanation: All the options lead to formation of a reliable system.

3. A system maintaining its integrity while accepting a temporary halt in its operation is said to be in a state of

- a) Full Fault Tolerance
- b) Graceful Degradation
- c) Fail Soft
- d) Fail Safe

View Answer

Answer: d

Explanation: None.

4. Which of the following Error Detection checks is not a part of Application detection?

- a) Hardware checks
- b) Timing checks
- c) Reversal checks
- d) Coding checks

View Answer

Answer: a

Explanation: Hardware is a part of environment detection check.

5. Exception handling is a type of

- a) forward error recovery mechanism
- b) backward error recovery mechanism
- c) All of the mentioned
- d) None of the mentioned

View Answer

Answer: a

Explanation: Exception handling is a forward error recovery mechanism, as there is no roll back to a previous state; instead control is passed to the handler so that recovery procedures can be initiated.

6. Non-occurrence of improper alteration of information is known as

- a) Available Dependability

- b) Confidential Dependability
- c) Maintainable Dependability
- d) Integral Dependability

View Answer

Answer: d

Explanation: Integrity is to keep the original content safe from alteration.

7. In N-version programming which is the independent generation of N, the value of N is

- a) greater than 1
- b) less than 1
- c) greater than 2
- d) less than 2

View Answer

Answer: c

Explanation: N-version programming (NVP), also known as multiversion programming or multiple-version dissimilar software, is a method or process in software engineering where multiple functionally equivalent programs are independently generated from the same initial specifications.

8. In Log-based fault tolerance, logs of undetermined events are saved and replayed on failure.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

9. All fault-tolerant techniques rely on

- a) Integrity
- b) Dependability
- c) Redundancy
- d) None of the mentioned

View Answer

Answer: c

Explanation: All fault-tolerant techniques rely on extra elements introduced into the system to detect & recover from faults.

10. It is imperative for a communicating processes to reach consistent recovery points to avoid the _____ effect, with backward error recovery mechanism.

- a) Static
- b) Dynamic
- c) Domino
- d) Whirlpool

View Answer

Answer: c

Explanation: None.

Software Engineering Questions and Answers – Software Reliability Models

1. Which one is not a software quality model?

- a) ISO 9000
- b) McCall model
- c) Boehm model
- d) ISO 9126

[View Answer](#)

Answer: a

Explanation: ISO 9000 is software certification.

2. How many levels are present in CMM?

- a) three
- b) four
- c) five
- d) six

[View Answer](#)

Answer: c

Explanation: The five levels are: initial, repeatable, defined, managed, optimizing.

3. Which level of CMM is for process management?

- a) Initial
- b) Repeatable
- c) Defined
- d) Optimizing

[View Answer](#)

Answer: d

Explanation: It is a characteristic of processes at this level that the focus is on continually improving process performance through both incremental and innovative technological changes/improvements.

4. In ISO 9126, time behavior and resource utilization are a part of

- a) maintainability
- b) portability
- c) efficiency
- d) usability

[View Answer](#)

Answer: c

Explanation: A set of attributes that bear on the relationship between the level of performance of the software and the amount of resources used, under stated conditions.

5. Which of the following is not a Probabilistic Model?

- a) Error seeding
- b) NHPP
- c) Input domain
- d) Halstead's software metric

[View Answer](#)

Answer: d

Explanation: Halstead's software metric is a deterministic model.

6. Software reliability is defined with respect to

- a) time
 - b) bugs
 - c) failures
 - d) quality
- View Answer

Answer: a
Explanation: None.

7. Failure In Time (FIT) is another way of reporting
- a) MTTR
 - b) MTTF
 - c) MTSF
 - d) MTBF
- View Answer

Answer: d
Explanation: FIT reports the number of expected failures per one billion hours of operation for a device. This term is used particularly by the semiconductor industry but is also used by component manufacturers .

8. MTTF stands for
- a) Minimum time to failure
 - b) Mean time to failure
 - c) Maximum time to failure
 - d) None of the mentioned
- View Answer

Answer: b
Explanation: None.

9. Mean Time To Repair (MTTR) is the time needed to repair a failed hardware module.
- a) True
 - b) False
- View Answer

Answer: a
Explanation: In an operational system, repair generally means replacing a failed hardware part. Thus, hardware MTTR could be viewed as mean time to replace a failed hardware module.

10. IMC Networks is a leading _____ certified manufacturer of optical networking and LAN/WAN connectivity solutions for enterprise, telecommunications and service provider applications.
- a) Telco Systems
 - b) D-Link
 - c) Arista Networks
 - d) ISO 9001
- View Answer

Answer: a
Explanation: Founded in 1988, with over one million products installed worldwide, IMC Networks offers a wide range of fiber media and mode converters for a variety of applications.

Software Engineering Questions and Answers – Software Testing Techniques – 1

1. Which of the following term describes testing?

- a) Finding broken code
- b) Evaluating deliverable to find errors
- c) A stage of all projects
- d) None of the mentioned

View Answer

Answer: b

Explanation: Software testing is the process of evaluation a software item to detect differences between given input and expected output.

2. What is Cyclomatic complexity?

- a) Black box testing
- b) White box testing
- c) Yellow box testing
- d) Green box testing

View Answer

Answer: b

Explanation: Cyclomatic complexity measures the amount of decision logic in the program module. Cyclomatic complexity gives the minimum number of paths that can generate all possible paths through the module.

3. Lower and upper limits are present in which chart?

- a) Run chart
- b) Bar chart
- c) Control chart
- d) None of the mentioned

View Answer

Answer: a

Explanation: A run chart is used to monitor the behavior of a variable over time for a process or system. Run charts graphically display cycles, trends, shifts, or non-random patterns in behavior over time. It contains lower and upper limits.

4. Maintenance testing is performed using which methodology?

- a) Retesting
- b) Sanity testing
- c) Breadth test and depth test
- d) Confirmation testing

View Answer

Answer: c

Explanation: Maintenance Testing is done on the already deployed software. The deployed software needs to be enhanced, changed or migrated to other hardware. The Testing done during this enhancement, change and migration cycle is known as maintenance testing.

5. White Box techniques are also classified as

- a) Design based testing
- b) Structural testing
- c) Error guessing technique
- d) None of the mentioned

View Answer

Answer: b

Explanation: The structural testing is the testing of the structure of the system or component. Structural testing is often referred to as 'white box' or 'glass box' or 'clear-box testing' because in structural testing we are interested in what is happening 'inside the system/application'.

6. Exhaustive testing is
- a) always possible
 - b) practically possible
 - c) impractical but possible
 - d) impractical and impossible
- View Answer

Answer: c

Explanation: Exhaustive testing is the testing where we execute single test case for multiple test data. It means if we are using single test case for different product or module under manual testing.

testing .

7. Which of the following is/are White box technique?
- a) Statement Testing
 - b) Decision Testing
 - c) Condition Coverage
 - d) All of the mentioned
- View Answer

Answer: d

Explanation: Statement testing, decision testing, condition coverage all of them uses white box technique.

8. What are the various Testing Levels?
- a) Unit Testing
 - b) System Testing
 - c) Integration Testing
 - d) All of the mentioned
- View Answer

Answer: d

Explanation: Unit, system, integration testing all of them are levels in testing.

9. Boundary value analysis belong to?
- a) White Box Testing
 - b) Black Box Testing
 - c) White Box & Black Box Testing
 - d) None of the mentioned
- View Answer

Answer: b

Explanation: Boundary value analysis is based on testing at the boundaries between partitions and checks the output with expected output.

10. Alpha testing is done at
- a) Developer's end
 - b) User's end
 - c) Developer's & User's end
 - d) None of the mentioned
- View Answer

Answer: a

Explanation: Alpha testing takes place at the developer's end. Developers observe the users and note problems. Alpha testing is testing of an application when development is about to complete. Minor design changes can still be made as a result of alpha testing.

Software Engineering Questions and Answers – Software Testing Techniques – 2

1. The testing in which code is checked

- a) Black box testing
- b) White box testing
- c) Red box testing
- d) Green box testing

View Answer

Answer: b

Explanation: White-box testing is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality .

2. Testing done without planning and Documentation is called

- a) Unit testing
- b) Regression testing
- c) Adhoc testing
- d) None of the mentioned

View Answer

Answer: c

Explanation: Adhoc testing is used term for software testing performed without planning and documentation. The tests are intended to be run only once, unless a defect is discovered.

3. Acceptance testing is also known as

- a) Grey box testing
- b) White box testing
- c) Alpha Testing
- d) Beta testing

View Answer

Answer: d

Explanation: Acceptance testing is a test conducted to determine if the requirements of a specification or contract are met and is done by users.

4. Which of the following is non-functional testing?

- a) Black box testing
- b) Performance testing
- c) Unit testing
- d) None of the mentioned

View Answer

Answer: b

Explanation: Performance testing is in general testing performed to determine how a system performs in terms of responsiveness and stability under a particular workload.

5. Beta testing is done at

- a) User's end
- b) Developer's end
- c) User's & Developer's end
- d) None of the mentioned

View Answer

Answer: a

Explanation: In beta testing the user evaluates the product and gives his feedback.

6. SPICE stands for

- a) Software Process Improvement and Compatibility Determination
- b) Software Process Improvement and Control Determination
- c) Software Process Improvement and Capability Determination
- d) None of the mentioned

View Answer

Answer: c

Explanation: SPICE stands for Software Process Improvement and Control Determination.

7. Unit testing is done by

- a) Users
- b) Developers
- c) Customers
- d) None of the mentioned

View Answer

Answer: b

Explanation: Unit testing is a method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures are tested to determine if they are fit for use.

8. Behavioral testing is

- a) White box testing
- b) Black box testing
- c) Grey box testing
- d) None of the mentioned

View Answer

Answer: b

Explanation: Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings.

9. Which of the following is black box testing

- a) Basic path testing
- b) Boundary value analysis
- c) Code path analysis
- d) None of the mentioned

View Answer

Answer: b

Explanation: Boundary value analysis is a software testing technique in which tests are designed to include representatives of boundary values.

10. Which of the following is not used in measuring the size of the software

- a) KLOC
- b) Function Points
- c) Size of module
- d) None of the mentioned

View Answer

Answer: c

Explanation: KLOC and function points both can be used as size measurement for measuring the size of the software.

Software Engineering Questions and Answers – Software Testing Strategies

1. Software Debugging is a set of activities that can be planned in advance and conducted systematically.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: Software Testing is a set of such activities.

2. Which of the following is not a software testing generic characteristics?

- a) Different testing techniques are appropriate at different points in time
- b) Testing is conducted by the developer of the software or an independent test group
- c) Testing and debugging are different activities, but debugging must be accommodated in any testing strategy
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

3. ITG stands for

- a) instantaneous test group
- b) integration testing group
- c) individual testing group
- d) independent test group

[View Answer](#)

Answer: d

Explanation: The role of an independent test group (ITG) is to remove the inherent problems associated with letting the builder test the thing that has been built.

4. By collecting _____ during software testing, it is possible to develop meaningful guidelines to halt the testing process.

- a) Failure intensity
- b) Testing time
- c) Metrics
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: It answers questions like: "When are we done with testing?".

5. Which of the following issues must be addressed if a successful software testing strategy is to be implemented?

- a) Use effective formal technical reviews as a filter prior to testing
- b) Develop a testing plan that emphasizes "rapid cycle testing."
- c) State testing objectives explicitly
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: All the mentioned options are carried out for the purpose.

6. Test cases should uncover errors like

- a) Nonexistent loop termination
- b) Comparison of different data types
- c) Incorrect logical operators or precedence

d) All of the mentioned

View Answer

Answer: a

Explanation: Test cases should uncover errors such as all the explained options and much more.

7. Which of the following errors should not be tested when error handling is evaluated?

- a) Error description is unintelligible
- b) Error noted does not correspond to error encountered
- c) Error condition causes system intervention prior to error handling
- d) Error description provide enough information to assist in the location of the cause of the error

View Answer

Answer: a

Explanation: Actually, error description does not provide enough information to assist in the location of the cause of the error.

8. What is normally considered as an adjunct to the coding step

- a) Integration testing
- b) Unit testing
- c) Completion of Testing
- d) Regression Testing

View Answer

Answer: b

Explanation: After source level code has been developed, reviewed, and verified for correspondence to component level design, unit test case design begins.

9. Which of the following is not regression test case?

- a) A representative sample of tests that will exercise all software functions
- b) Additional tests that focus on software functions that are likely to be affected by the change
- c) Tests that focus on the software components that have been changed
- d) Low-level components are combined into clusters that perform a specific software sub-function

View Answer

Answer: d

Explanation: Regression testing may be conducted manually, by re-executing a subset of all test cases or using automated capture or playback tools

10. Which testing is an integration testing approach that is commonly used when “shrink-wrapped” software products are being developed?

- a) Regression Testing
- b) Integration testing
- c) Smoke testing
- d) Validation testing

View Answer

Answer: c

Explanation: Smoke testing is designed as a pacing mechanism for time-critical projects, allowing the software team to assess its project on a frequent basis.

11. In which testing level the focus is on customer usage?

- a) Alpha Testing
- b) Beta Testing
- c) Validation Testing
- d) Both Alpha and Beta

View Answer

Answer: d

Explanation: Alpha testing is done at developer's end while beta testing is done at user's end.

12. Validation refers to the set of tasks that ensure that software correctly implements a specific function.

- a) True
- b) False

View Answer

Answer: b

Explanation: Its verification, while validation refers to a different set of tasks that ensure that the software that has been built is traceable to customer requirements.

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Software Engineering Questions and Answers – Object Oriented Testing

1. The architecture of object-oriented software results in a series of layered subsystems that encapsulate collaborating classes.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: It is necessary to test an OO system at a variety of different levels in an effort to uncover errors that may occur as classes collaborate with one another and subsystems communicate across architectural layers.

2. The construction of object-oriented software begins with the creation of

- a) design model
- b) analysis model
- c) code levels
- d) both design and analysis model

[View Answer](#)

Answer: d

Explanation: It is due to the evolutionary nature of the OO software engineering paradigm, these models begin as relatively informal representations of system requirements and evolve into detailed models of classes, class connections and relationships, system design and allocation, and object design.

3. Which testing integrates the set of classes required to respond to one input or event for the system?

- a) cluster testing
- b) thread-based testing
- c) use-based testing
- d) none of the mentioned

[View Answer](#)

Answer: b

Explanation: Each thread is integrated and tested individually. Regression testing is applied to ensure that no side effects occur.

4. Which of the following is one of the steps in the integration testing of OO software?

- a) cluster testing
- b) thread-based testing
- c) use-based testing
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: Here, a cluster of collaborating classes is exercised by designing test cases that attempt to uncover errors in the collaborations.

5. _____ methods can be used to drive validation tests

- a) Yellow-box testing
- b) Black-box testing
- c) White-box testing
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: Black-box testing methods are as appropriate for OO systems as they are for systems developed using conventional software engineering methods.

6. Which of the following is a part of testing OO code?

- a) Validation tests
- b) Integration tests
- c) Class tests
- d) System tests

View Answer

Answer: c

Explanation: None.

7. The object of _____ within an OO system is to design tests that have a high likelihood of uncovering plausible bugs.

- a) Fault-based testing
- b) Integration testing
- c) Use-based testing
- d) Scenario-based testing

View Answer

Answer: a

Explanation: The object of fault-based testing within an OO system is to design tests that have a high likelihood of uncovering plausible faults.

8. What refers to the externally observable structure of an OO program?

- a) Deep structure
- b) Surface structure
- c) Core structure
- d) All of the mentioned

View Answer

Answer: b

Explanation: Surface structure refers to the externally observable structure of an OO program which is immediately obvious to an end-user.

9. _____ categorizes class operations based on the generic function that each performs.

- a) Category-based partitioning
- b) Attribute-based partitioning
- c) State-based partitioning
- d) None of the mentioned

View Answer

Answer: a

Explanation: For example, operations in the account class can be categorized in initialization operations (open, setup), computational operations (deposit, withdraw) etc.

10. Which of the following is black-box oriented and can be accomplished by applying the same black-box methods discussed for conventional software?

- a) Conventional testing
- b) OO system validation testing
- c) Test case design
- d) Both Conventional testing and OO system validation testing

View Answer

Answer: d

Explanation: None.

11. In which of the following testing strategies, a smallest testable unit is the encapsulated class or object?

- a) Unit testing
- b) Integration testing
- c) System testing
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

12. Which of the following testing types is not a part of system testing?

- a) Recovery testing
- b) Stress testing
- c) System testing
- d) Random testing

View Answer

Answer: d

Explanation: It is a testing method at class level.

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Software Engineering Questions and Answers – Debugging Techniques and Approaches

1. What is testing process' first goal?

- a) Bug prevention
- b) Testing
- c) Execution
- d) Analyses

View Answer

Answer: a

Explanation: Its better to prevent a bug rather than putting time in its testing and removal.

2. Software mistakes during coding are known as

- a) errors
- b) failures
- c) bugs
- d) defects

View Answer

Answer: c

Explanation: A software bug is an error, flaw, failure, or fault in a computer program or system that causes it to produce an incorrect or unexpected result.

3. Name an evaluation technique to assess the quality of test cases.

- a) Mutation analysis
- b) Validation
- c) Verification
- d) Performance analysis

View Answer

Answer: a

Explanation: Mutation analysis is used to design new software tests and evaluate the quality of existing software tests.

4. Test should be conducted for every possible

- a) data
- b) case
- c) variable
- d) all of the mentioned

View Answer

Answer: d

Explanation: It increases the scope for code inspection.

5. Which of the following is not a part of bug report?

- a) Test case
- b) Output
- c) Software Version
- d) LOC

View Answer

Answer: d

Explanation: Line of code(LOC) is immaterial during testing, as it is an exhaustive process.

6. Which of the following is not a part of Execution Flow during debugging?

- a) Step Over

- b) Step Into
 - c) Step Up
 - d) Step Out
- View Answer

Answer: c

Explanation: Step Into executes code, Step Out continues execution until bound value and Step Over is to execute code without stopping.

7. Cyclomatic Complexity method comes under which testing method.

- a) Yellow box
 - b) White box
 - c) Gray box
 - d) Black box
- View Answer

Answer: b

Explanation: Cyclomatic Complexity tells us about the number of independent paths in a program which is covered in white box testing.

8. Which is a black box testing technique appropriate to all levels of testing?

- a) Acceptance testing
 - b) Regression testing
 - c) Equivalence partitioning
 - d) Quality assurance
- View Answer

Answer: c

Explanation: Equivalence partitioning is a software testing technique that divides the input data of a software unit into partitions of equivalent data from which test cases can be derived.

9. Which of the following is the way of ensuring that the tests are actually testing code?

- a) Control structure testing
 - b) Complex path testing
 - c) Code coverage
 - d) Quality assurance of software
- View Answer

Answer: c

Explanation: None.

10. Effective testing will reduce _____ cost.

- a) maintenance
 - b) design
 - c) coding
 - d) documentation
- View Answer

Answer: a

Explanation: Remaining options are a part of development process.

11. Which of the following is a common pointer problem?

- a) Data sharing errors
 - b) Accessing data elements of the wrong type
 - c) Attempting to use memory areas after freeing them
 - d) All of the mentioned
- View Answer

Answer: d

Explanation: These are the common errors programmers make while coding.

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Software Engineering Questions and Answers – Testing Tools

1. Standard Enforcer is a
- a) Static Testing Tool
 - b) Dynamic Testing
 - c) Static & Dynamic Testing
 - d) None of the mentioned

View Answer

Answer: a

Explanation: Static Testing tools are those that perform analysis of the the program without executing them at all.

2. Many applications using static analysis find 0.1-0.2% NCSS. NCSS stands for
- a) Non-Code Source Statement
 - b) Non Comment Source Sentence
 - c) Non-Comment Source Statement
 - d) All of the mentioned

View Answer

Answer: c

Explanation: None.

3. Which testing tool does a simple job of enforcing standards in a uniform way of many programs?
- a) Static Analyzer
 - b) Code Inspector
 - c) Standard Enforcer
 - d) Both Code Inspector & Standard Enforcer

View Answer

Answer: d

Explanation: A standard enforcer is just like a code inspector, except that the rules are generally simpler. Standard enforcer looks at only single statements while the static analyzer looks at whole programs.

4. Software Testing with real data in real environment is known as
- a) alpha testing
 - b) beta testing
 - c) regression testing
 - d) none of the mentioned

View Answer

Answer: b

Explanation: Beta testing is the last stage of testing, and normally can involve sending the product to beta test sites outside the company for real-world exposure or offering the product for a free trial download over the Internet.

5. Which of the following testing tools examine program systematically & automatically ?
- a) Code Inspector
 - b) Static Analyzer
 - c) Standard Enforcer
 - d) Coverage Analyzer

View Answer

Answer: b

Explanation: A static analyzer operates from a pre-computed database o descriptive information derived from the source text of the program.

6. Which testing tool is responsible for documenting programs ?

- a) Test/File Generator
- b) Test Harness System
- c) Test Archiving Systems
- d) Coverage Analyzer

View Answer

Answer: c

Explanation: The answer is self-explanatory.

7. Beta Testing is done by

- a) Developers
- b) Testers
- c) Users
- d) All of the mentioned

View Answer

Answer: c

Explanation: None.

8. Standard enforcer tool looks at the whole program.

- a) True
- b) False

View Answer

Answer: b

Explanation: This tool looks at only single statements.

9. Debugging Program is a program which runs concurrently with the program under test & provide commands to

- a) examine memory & registers
- b) stop execution at a particular point
- c) search for references for particular variables, constant and registers
- d) all of the mentioned

View Answer

Answer: d

Explanation: Debugging is a methodical process of finding and reducing the number of bugs, or defects, in a computer program or a piece of electronic hardware, thus making it behave as expected.

10. Execution Verifier is a dynamic tool that is also known as

- a) Test File Generator
- b) Coverage Analyzer
- c) Output Comparator
- d) Test Harness System

View Answer

Answer: b

Explanation: None.

Software Engineering Questions and Answers – Software Monitoring

1. Why is software difficult to build ?

- a) Controlled changes
- b) Lack of reusability
- c) Lack of monitoring
- d) All of the mentioned

View Answer

Answer: c

Explanation: Monitoring is a key aspect which requires much attention for a successful build.

2. Which of the following is not a conflict in software development team?

- a) Simultaneous updates
- b) Shared and common code
- c) Versions
- d) Graphics issues

View Answer

Answer: d

Explanation: These are part of design, which can be handled by the design team.

3. Which of the following lasts for the duration of the project and covers the development process?

- a) Monitoring all key parameters like cost, schedule, risks
- b) Taking corrective actions when needed
- c) Providing information on the development process in terms of metrics
- d) All of the mentioned

View Answer

Answer: a

Explanation: None.

4. Which of the following is not a typical environment in communication facilitation ?

- a) Multiple teams
- b) Multiple user groups
- c) Multiple fests
- d) Multiple locations

View Answer

Answer: c

Explanation: The answer is not related to the question.

5. Which of the following is a software process ?

- a) Analysis and design
- b) Configuration and management
- c) Business modeling
- d) All of the mentioned

View Answer

Answer: d

Explanation: None.

6. Which of the following is not included in Issues Meetings?

- a) Issues gathered the day before
- b) Regular schedule of meeting

- c) Discussion with business
 - d) Attendance
- View Answer

Answer: c

Explanation: Discussion with business is planning in QA Meetings.

7. Which of the following is not a part of Software Configuration Management Basics?

- a) Identification
- b) Version
- c) Auditing and Reviewing
- d) Status Accounting

View Answer

Answer: b

Explanation: None.

8. What is a collection of software elements treated as a unit for the purposes of SCM?

- a) Software Configuration Item
- b) Baseline
- c) Configuration
- d) Configuration Control Board

View Answer

Answer: a

Explanation: Software Configuration Item is a collection of software elements treated as a unit for the purposes of SCM.

9. What is one or more software configuration items that have been formally reviewed and agreed upon and serve as a basis for further development?

- a) Configuration
- b) Baseline
- c) Software
- d) All of the mentioned

View Answer

Answer: b

Explanation: Baseline – One or more software configuration items that have been formally reviewed and agreed upon and serve as a basis for further development.

10. What is validating the completeness of a product?

- a) Identification
- b) Software
- c) Auditing and Reviewing
- d) Status Accounting

View Answer

Answer: c

Explanation: Auditing and Reviewing is validating the completeness of a product and that SCM procedures are being followed.

11. What is group with the responsibility for reviewing and approving changes to baselines?

- a) Software Configuration Item
- b) Baseline
- c) Configuration
- d) Configuration Control Board

View Answer

Answer: d

Explanation: Configuration Control Board (CCB) is the group with the responsibility for reviewing and approving changes to baselines.

12. In many settings PM is a center of communication hub

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

13. What is a specific instance of a baseline or configuration item?

- a) Software
- b) Configuration
- c) Version
- d) Status Accounting

View Answer

Answer: c

Explanation: Even the smallest development projects should utilize some sort of version and baseline control tool.

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Software Engineering Questions and Answers – Software Control

1. SCM stands for

- a) Software Control Management
- b) Software Configuration Management
- c) Software Concept Management
- d) None of the mentioned

View Answer

Answer: b

Explanation: In software engineering, software configuration management (SCM) is the task of tracking and controlling changes in the software, part of the larger cross-discipline field of configuration management.

2. When code is made available to others, it goes in a/an

- a) hard drive
- b) access-controlled library
- c) servers
- d) access control

View Answer

Answer: b

Explanation: None.

3. Which of the following is not a main phase in Configuration Management (CM) Process?

- a) CM Planning
- b) Executing the CM process
- c) CM audits
- d) None of the mentioned

View Answer

Answer: d

Explanation: All are main phases of CM.

4. CM is about managing the different items in the product, and changes in them.

- a) True
- b) False

View Answer

Answer: a

Explanation: None.

5. What allows different projects to use the same source files at the same time?

- a) Version Control
- b) Access control
- c) CM Process
- d) Version Control and Access control

View Answer

Answer: a

Explanation: It allows software engineers to continue development along a branch even when a line of development is frozen.

6. Which of the following is not a change management process?

- a) Log the changes
- b) Estimate impact on effort and schedule
- c) Review impact with stakeholders

d) None of the mentioned

View Answer

Answer: d

Explanation: All are required for a change.

7. Configuration management (CM) is needed to deliver product to the client

a) True

b) False

View Answer

Answer: a

Explanation: None.

8. What is one or more software configuration items that have been formally reviewed and agreed upon and serve as a basis for further development?

a) Baseline

b) Cumulative changes

c) CM

d) Change Control

View Answer

Answer: a

Explanation: In configuration management, a “baseline” is an agreed-to description of the attributes of a product, at a point in time, which serves as a basis for defining change.

9. How are baselines verified?

a) By reviews

b) By inspections

c) By testing of code

d) All of the mentioned

View Answer

Answer: c

Explanation: Testing verifies the agreed-to description.

10. Which of the following is an example of Configuration Items ?

a) SCM procedures

b) Source code

c) Software design descriptions

d) All of the mentioned

View Answer

Answer: d

Explanation: All are covered in CM.

11. SCM controls only the products of the development process.

a) True

b) False

View Answer

Answer: a

Explanation: None.

12. CCB stands for

a) Change Control Board

- b) Change Control Baseline
- c) Cumulative Changes in Baseline
- d) None of the mentioned

View Answer

Answer: a

Explanation: None.

13. What information is required to process a change to a baseline?

- a) Reasons for making the changes
- b) A description of the proposed changes
- c) List of other items affected by the changes
- d) All of the mentioned

View Answer

Answer: d

Explanation: A baseline is an agreed-to description of the product, changes require multiple reasons..

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Software Engineering Questions and Answers – Quality Management

1. Quality Management in software engineering is also known as

- a) SQA
- b) SQM
- c) SQI
- d) SQA and SQM

View Answer

Answer: a

Explanation: Quality Management is also called software quality assurance (SQA) which serves as an umbrella activity that is applied throughout the software process.

2. Quality also can be looked at in terms of user satisfaction which includes

- a) A compliant product
- b) Good quality output
- c) Delivery within budget and schedule
- d) All of the mentioned

View Answer

Answer: d

Explanation: This focuses on how well the implementation follows the design and how well the resulting system meets its requirements .

3. Inspections and testing are what kinds of Quality Costs?

- a) Prevention
- b) Internal Failure
- c) External Failure
- d) Appraisal

View Answer

Answer: d

Explanation: Inspections, equipment calibration, maintenance and testing appraisal costs is quality management.

4. According to Pareto's principle, x% of defects can be traced to y% of all causes. What are the values of x and y?

- a) 60, 40
- b) 70, 30
- c) 80, 20
- d) No such principle exists

View Answer

Answer: c

Explanation: The Pareto principle (also known as the 80–20 rule) states that, for many events, roughly 80% of the effects come from 20% of the causes.

5. What is Six Sigma?

- a) It is the most widely used strategy for statistical quality assurance
- b) The "Six Sigma" refers to six standard deviations
- c) It is the most widely used strategy for statistical quality assurance AND The "Six Sigma" refers to six standard deviations
- d) A Formal Technical Review(FTR) guideline for quality walkthrough or inspection

View Answer

Answer: c

Explanation: The Six Sigma uses data and statistical analysis to measure and improve a company's operational performance .

6. Which of the following is not a core step of Six Sigma?

- a) Define
 - b) Control
 - c) Measure
 - d) Analyse
- View Answer

Answer: b

Explanation: It is an additional step added for existing processes and can be done in parallel.

7. Non-conformance to software requirements is known as
- a) Software availability
 - b) Software reliability
 - c) Software failure
 - d) None of the mentioned
- View Answer

Answer: c

Explanation: Given a set of valid requirements, all software failures can be traced to design or implementation problems.

8. Software safety is equivalent to software reliability.
- a) True
 - b) False
- View Answer

Answer: b

Explanation: Software reliability uses statistical analysis to determine the likelihood that a software failure will occur; however, the failure may not necessarily result in a hazard or mishap.

9. Misinterpretation of customer communication is a sample of possible cause defects.
- a) True
 - b) False
- View Answer

Answer: a

Explanation: Translation gap between the client and the developer often leads to software defects.

10. What kind of quality cost is incurred when an error is detected in a product prior to shipment?
- a) Prevention
 - b) Internal Failure
 - c) External Failure
 - d) Appraisal
- View Answer

Answer: b

Explanation: This includes rework, repair, and failure mode analysis.

11. The degree to which the design specifications are followed during manufacturing is known as
- a) Quality of design
 - b) Quality of conformance
 - c) Quality of testing
 - d) None of the mentioned
- View Answer

Answer: b

Explanation: This focuses on how well the implementation follows the design and how well the resulting system meets its requirements.

12. Quality of design encompasses requirements and specifications of the system.

- a) True
- b) False

View Answer

Answer: a

Explanation: The characteristic that designers specify for an item are cover in quality of design.

13. According to ISO 9001, inspection and testing comes under which management responsibility?

- a) Process control
- b) Document control
- c) Control of nonconforming products
- d) Servicing

View Answer

Answer: a

Explanation: None.

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